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THE

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EDITED BY

GEORGE M. GOULD, M.D.

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ORIGINAL ARTICLES.

GASTRO-INTESTINAL AND HEPATIC DISORDERS, ESPECIALLY CHRONIC GASTRO-INTESTINAL CATARRH, IN RELATION TO THE ETIOLOGY OF SOME CASES OF INSANITY.[1]

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I THINK it is generally admitted by those who have given the subject much thought that in many cases the usually assigned causes of insanity are unsatisfactory and insufficient. Relatives or friends are generally ready with an explanation, particularly when this fits in with some preconceived idea of their own, as, for example, those much-abused causes—religious excitement, disappointment and overwork; but to the student of psychology these are too often inapplicable, if not incorrect. He feels that much is wanting to account for the phenomena witnessed, and that many links in the chain of etiology are missing; but it is not always easy to find these missing links; indeed, the subject is one beset with difficulties. On this matter of exact etiology, both the text-books and asylum reports leave much unsupplied. The list of causes is long enough, but we cannot help feeling that they are too general, and do not meet the requirements of scientific precision.

In connection with the obscure causes of some cases of insanity, it is the purpose of this paper to examine briefly into certain morbid states of the gastro-intestinal tract, of the liver, and of deficient excretion, which seem in the writer's judgment not uncommon but perhaps often unrecognized causes of mental derangement, and especially of melancholia.

In a general way, disturbances of the nervous system arising from derangement of the digestive organs have been recognized from remotest antiquity. It would be superfluous to more than refer to the well-founded connection between dyspepsia and despondency; between so-called biliousness and "the blues," or between prolonged constipation and mental dulness, drowsiness or headache. The derivation of the words melancholia and hypochondriasis sufficiently indicates that the old Grecians were acute observers and believed in such relationship. This association is so quaintly described by that inimitable writer, Sydney Smith, that I shall crave your indulgence for a few moments while I include a short quotation.[1] He says:

"Happiness is not impossible without health, but it is of very difficult attainment. I do not mean by health merely an absence of dangerous complaints, but that the body should be in perfect tune, full of vigor and alacrity. The longer I live the more I am convinced that the apothecary is of more importance than Seneca, and that half the unhappiness in the world proceeds from little stoppages, from a duct choked up, from food pressing in the wrong place, from a vexed duodenum, or an agitated pylorus. The deception as practised upon human creatures is curious and entertaining. My friend sups late, he eats some strong soup, then a lobster, then some tart, and he dilutes these esculent varieties with wine. The next day I call upon him. He is going to sell his house in London and retire into the country.. He is alarmed for his oldest daughter's health. His expenses are hourly increasing, and nothing but a timely retreat can save him from ruin. All this is the lobster, and when over-excited nature has had time to manage this testaceous encumbrance, the daughter recovers, the finances are in good order, and every rural idea effectually excluded from the mind. In the same manner old friendships are destroyed by toasted cheese, and hard salted meat has led to suicide. Unpleasant feelings of the body produce corresponding sensations in the mind, and a great scene of wretchedness is sketched out by a morsel of indigestible and misguided food. Of such infinite consequence to happiness is it to study the body."

Of course, this is known to everybody, but a more striking picture could not be presented of the effects of disordered states of the digestive organs on the mind.

To make the subject before us better understood, let us divide it into three parts. In the first, we shall consider the morbid states of the gastro-enteric canal and the liver and also other conditions favoring the accumulation and generation of those toxic agents which we believe to be a prominent cause of the mental disturbance in question. In the second, the absorption of these toxines and their effect on the brain and nervous system generally will claim our attention; and in the third we shall consider the partial retention or retarded elimination of various poisons from the economy and their further cumulative effect upon the brain and excretory organs.

Addressing ourselves to the first part, it is our opinion that chronic gastric and intestinal catarrh, with chronic indigestion in the stomach and intes-

[1] Being the Address in Mental Disorders delivered at the annual meeting of the Pennsylvania State Medical Society at Reading, Pa., June, 1891.

[1] Quoted from Brunton; Disorders of Digestion, p. 45.

tines, is the most constant and responsible cause of derangement of the nervous system. The alteration in the liver is, perhaps, chiefly that of chronic congestion with impairment of its important functions of properly transforming the products of digestion into nutritive fluid, and with deficiency in the secretion of bile.

It may be interesting to consider for a moment the probable origin of these chronic catarrhs. In many there is doubtless a strong hereditary predisposition to them, often strumous in character, which is readily developed by improper food. It is my firm belief, as it is that of others, that many of these ills begin in early childhood and even in infancy, from over-eating, and from badly-cooked or improperly-selected foods, especially hot breads, and that they are perpetuated by a continuance in this unwise course. The result is that in late childhood or early adult years, the boy or girl is a confirmed dyspeptic, mentally and physically handicapped, and illy prepared to endure the hard labor that may fall to his or her lot, or to meet the exactions of a long, rigid educational course, or to satisfy the silly ambitions of parents or teachers, who would have him or her acquire endless accomplishments. There are many other causes of these catarrhal states, but it is not my purpose to consider them here; it is with the condition that we are now chiefly concerned. This established and having become chronic, what occurs? All the functions of the stomach and intestines are of course impaired, digestion is manifestly imperfect, and being retarded is attended with undue fermentations, with putrefaction, and with the evolution of various gases. Under these favorable conditions, bacteria multiply, producing ptomaines, some toxic, some inert. Noxious gases distend the hollow viscera, interfering with peristalsis, and moreover are doubtless often absorbed into the blood. Thus after meals there are constantly present soluble foods, vitiated by myriads of microorganisms and their poisonous products, and mixed with abundant mucus and altered digestive ferments—a mass ill-fitted for absorption. This, the next step in the digestive process, brings us to the second part of our subject.

Dujardin-Beaumetz[1] in his admirable lectures on "Prophylactic Hygiene," asserts that from these putrefactive changes in the intestinal canal, the system may be poisoned in three ways: first, by the absorption of pathogenic microbes, which he terms a species of auto-infection; second, by the absorption of chemical poisons or alkaloids, formed by the action of these microbes on organic matter, viz., ptomaines, which he designates auto-intoxication; and third, by the combined agency of the pathogenic microbes and their ptomaines, which he calls toxinfections. To these I would add a fourth and a fifth, viz., by the entrance into the blood of various gases, especially sulphuretted hydrogen—a sort of intestinal sewage-poisoning, as Brunton[1] aptly describes it; and fifthly, by the retention or imperfect elimination of the various excretory products of the living cells of the organism, or, in other words, the leucomaines—a species of leucomainæmia, let us call it. Now, these toxic agents first spoken of, or many of them, along with the soluble foods, are absorbed into the blood by means of the veins and lymphatics, and thus enter the portal circulation; but it should not be forgotten that most fortunately they are not yet in the general blood-current; that that grand old organ, the liver, intervenes as a gate-keeper, as Brunton[2] terms it, and discriminates in the most impartial manner. We know that among its other important functions, the liver is a destroyer of alkaloids, and that the bile is antiseptic, thus counteracting the effects of some of these poisons before absorption. Were this not the case, as has been correctly said, we should be in danger of poisoning after every meal. On this subject Brunton further remarks:[3] "Were it not for the power of the liver to obstruct the passage of poisons and destroy them, the alkaloids formed by normal digestion or by abnormal putrefactive processes in the intestines might readily pass to the heart, nervous system and kidneys, and cause dangerous or fatal consequences."

But it is to be noted that, from the great burden thrown upon the liver and from the prolonged irritation in the stomach and intestines, the liver must in time become crippled and unable to separate all the chaff from the wheat. As a consequence there are admitted into the general circulation many microorganisms or ptomaines or gases, which produce the pernicious effects we are about to describe.

I have no doubt that at times nearly all persons suffer from mild forms or degrees of this toxæmia. Some attacks of headache, vertigo, irritability, drowsiness, insomnia, paræsthesia and various morbid thoughts and impulses are to be ascribed to the temporary absorption of some of these alkaloids or gases, their circulation in the blood and their disturbing effect on the nervous system; but usually these attacks are of brief duration. The diet is restricted and elimination facilitated by a brisk cathartic or a diuretic, and the individual speedily recovers his equilibrium with a corresponding rise of spirits; but let this state of things become almost permanent, let the blood be constantly poisoned by these morbid elements, let the liver fail in its important functions, and the

[1] Therapeutic Gazette, Dec. 15, 1883, p. 802; translation by E. P. Hurd, M.D.

[1] Brunton: Disorders of Digestion, p. 47.
[2] Ibid., p. 47.
[3] Ibid., p. 17.

catarrhal conditions become more and more aggravated, and, above all, as is almost certain to happen, let the emunctories be partially closed—is it then a stretch of the imagination to picture such a person, of neuropathic tendency, oppressed by an indescribable gloom, by insomnia or by an apathy that precludes all energetic movement, by dull and persistent headaches, by morbid apprehensions, strange thoughts, impulses or hallucinations, or finally by actual mental perversion and even suicide? It seems to me that this is not an impossibility. Indeed it does occur and I have witnessed it. There is no question but that many strictly nervous disorders are caused or excited by gastro-intestinal derangements of the character indicated. Every neurologist will admit that some of the most obstinate neuroses, some of the most persistent nervous manifestations are directly traceable to these catarrhal states or the reflex irritation to which they give rise. If this be true, is it not evident that in some persons mental instead of nervous troubles may follow from the same cause? Have we any positive knowledge in regard to the specific action of any of these toxines on the cerebro-spinal system? Let us consider first some effects of ptomaines, those alkaloids resulting from putrefaction. We shall bear in mind that some of these are composed of carbon, hydrogen and nitrogen, and others of carbon, hydrogen, nitrogen and oxygen, in various proportions, and that their number is very great. Many are perfectly harmless, but some are exceedingly toxic, and like certain drugs seem to have a special tendency to affect nervous tissue. For example, hydrocollidine, found in putrid fish, produces convulsions. Others, as midatoxine, choline and ethylene-diamine are paralyzers, having an action similar to that of curare. Indeed, many of these putrefactive alkaloids produce effects exactly resembling those of the vegetable alkaloids—atropine, hyoscyamine, cannabine, coniine, etc. Now, it is notorious that the prolonged and excessive use of any of these drugs may cause delusions, delirium or hallucinations, and if persistently administered, even mental derangement. We can readily understand how certain cells or centres of the cerebral cortex, constantly bathed in blood tinctured with these toxic alkaloids, will, according to the excitability of the cells, react to the poison, and in this reaction we venture to include those symptoms characteristic of the mental disturbance; but beyond this, in the present state of knowledge, we are unable to go. We are not yet prepared to state that such and such a form of insanity may result from such and such a ptomaine or several of them, or from such and such a microbe. I know of no researches directly bearing on this point, and regret that I have not myself been in a position to make any experimental studies; but in the etiology of ordinary insanity I believe this is the direction future investigation will take, and I have such faith in this causation, that the proposal of vaccination or preventive inoculation for some forms of this malady will not at all surprise me, and this at no distant day.

If the theory outlined be correct, it may be asked: which of these agencies is the most productive of mental unsoundness, viz.: the microbes, the ptomaines, the leucomaines or the intestinal gases? To this I would reply that probably the ptomaines and leucomaines are the most fertile sources. We know that diseases of microbic origin are more sudden in their invasion, that there is generally but a brief period of incubation, and that the attack is ushered in by pronounced symptoms; but such is not the history of the inception of melancholia. Usually there is an initial stage extending over several weeks or months. There may be improvements, then relapses, and even years may pass before a well-marked attack occurs, which, by suitable treatment, may be averted altogether. This corresponds with what we should expect from a general poisoning of the blood, and from the fluctuations liable to occur under various modifying circumstances; but there are cases of acute mania, or acute delirium,[1] the etiology of which is well explained on the hypothesis of infection, and these are the cases that we believe may be engendered by a pathogenic microbe as specific in its action as the germ of rabies or of tetanus. I may here add that recent researches tend to show that the pathological symptoms in microbic affections result entirely from the chemical poisons elaborated by these microbes; in other words, from the ptomaines, and not from the germs themselves.[2] But this does not render any less important the presence of the microbe as the prime factor. In regard to the agency of gases, especially sulphuretted hydrogen, evolved by these putrefactive changes in the intestinal tract, we have no definite information. Senator[3] "in 1868 related a most instructive case, in which the patient collapsed, and nearly died with all the symptoms of poisoning by sulphuretted hydrogen generated in his own intestines." It is possible that gases, when absorbed, not only add to the contamination of the blood, but in some cases cause special forms of intoxication of nerve-centres.

We come to the third part of our subject, viz.: the more permanent effects of the prolonged retention of these toxic elements in the blood, from deficient excretion, upon the brain and excretory organs. The *rôle* here played by that important

[1] James Hendrie Lloyd: "Acute Delirium." THE MEDICAL NEWS, January 31, 1891, p. 122.

[2] Victor C. Vaughan: "The Chemical Factors in the Causation of Disease." Journal of the Amer. Med. Assoc., vol. xvi. p. 613.

[3] Quoted from Brunton: Disorders of Digestion, p. 47.

group of alkaloids, the leucomaines, is one of great significance. For the sake of simplifying the subject, suppose we let these leucomaines represent that great class of waste products resulting from tissue-metabolism, especially the so-called nitrogenous waste. Now, if to this class we add those substances that have passed through the liver unchanged, or only partly changed, such as peptones, the sugars, albumoses, etc., we shall have an array of toxic agents the circulation of which in the blood may be attended by the most serious results, and in my opinion often by insanity. Vaughan[1] states that Köttnitz, Furstner and others, have, in mental disease, found albumose in the urine. To differentiate between symptoms produced by these substances and those by the ptomaines proper, is, in the present state of knowledge, impossible, but under the former would fall the uric acid irritations, the lithæmias, the uræmic poisonings, the glycosurias, the peptonurias, the albumosurias, the stercoræmias, etc. Though we know little about some of these affections, we do know that a close relationship exists between at least one of them, lithæmia,[2] and mental depression. It must be obvious that the constant presence of some of these poisonous agents in the blood will lead to changes of the most decided character in the quality of that fluid, and that this alteration will affect the nutrition of every tissue. We have just seen how the nervous tissues, the most refined and sensitive of all, are first to react—in functional disturbance for a time, but finally in structural change. Doubtless, here is an explanation of some of the chronic interstitial and meningeal diseases of the brain that underlie the incurable psychoses.

Turning to inquire whether those organs suffer that are chiefly engaged in the effort at elimination which the economy is sure to institute, we find that they do. The skin is usually dry and harsh, the bowels torpid, the fecal evacuations generally scant; but, in my experience, we especially find renal disease.

In the able paper of Dr. Bennett, who last year delivered an address on "Insanity as a Symptom of Bright's Disease,"[3] numerous cases are cited in which mental derangement developed in those suffering from morbus Brightii. It seems to me that the observations then so clearly presented are in a measure supplemented in this paper; that the insanity apparently resulting from "uræmic poisoning," *i. e.*, from insufficient excretion of waste products in those having renal disease, is not primarily due to this cause, but that the blood, being vitiated in the manner described, gradually sets up structural changes in the kidneys, and that their inadequacy precipitates the mental outbreak—the brain perhaps being affected earlier than the kidneys. The subject, however, is so broad and far-reaching that the limit of this address will not permit more than this imperfect outline of it. In closing, I will not consume more time than to briefly point out remedial measures of a general character. Prophylaxis must ever be the leading indication. A study of individual and family idiosyncrasies in respect of foods is of great importance, because here we shall find the chief cause of those gastro-duodenal catarrhs that in after-life may result so disastrously. Dyspepsia in children with an inherited nervous or mental diathesis should, if possible, be prevented, but if not seen in time should be most systematically treated and cured, and recurrent attacks prevented by the strictest dietary. Especially would I urge the denial of starches and sugars, pastries, etc., to strumous and gouty children.

But what course of treatment shall we pursue in those threatened with mental disturbances from the causes here advanced? My plan is, first to regulate the diet and then to aid in the prompt elimination of offensive elements from the blood. To cases of melancholia I frequently give nightly a tablet composed of one-tenth of a grain each of calomel, podophyllin and ipecacuanha, followed in the morning by hot Carlsbad water, or hot Hunyadi Janos water; I may continue this tablet two, three or four weeks. At the same time, special treatment of the catarrhal condition will demand attention. So much has been written in recent years on the subject of gastro-intestinal antisepsis that I shall not occupy your time in going over the subject, except to state that in different cases bismuth, salol, charcoal, naphthol, carbolic acid, etc., have been employed with advantage; and, as advised by Dujardin-Beaumetz, I generally administer these in cachets. Special effort is made to avoid the ingestion of any food or drink likely to lead to undue fermentation or putrefaction. As regards solid foods, when there is a question between the use of the two, I much prefer medium-cooked meats to starchy or saccharine substances. The study of the urine will give us important signs as to the elimination of some kinds of waste, and the necessity for the restriction of such foods as supply this waste in undue proportions.

During my asylum experience I have often averted the impending outbreak of an otherwise mild chronic case by a brisk mercurial, followed by a few doses of compound jalap powder.

[1] Victor C. Vaughan: "The Chemical Factors in the Causation of Disease." Journal of the Amer. Med. Assoc., vol. xvi. p. 699.

[2] A. Haig: "Mental Depression and the Excretion of Uric Acid." London Practitioner, vol. xli. No. 5. J. M. DaCosta: "The Nervous Symptoms of Lithæmia." Amer. Jour. Med. Sci., Oct. 1881, p. 313. Brunton: Indigestion as a Cause of Nervous Depression, p. 233.

[3] Transactions of the State Medical Society of Pennsylvania, vol. xxi. 1889-90, p. 127.

In the London *Lancet*,[1] in 1889, a very suggestive case was reported by Dr. E. F. Willoughby, in which acute maniacal symptoms, occurring in a man about fifty years of age, were promptly controlled, and his reason restored within twelve hours, by copious diaphoresis from a hypodermatic injection of pilocarpine. Chloral and bromide had failed to procure sleep, which at once followed the use of pilocarpine. Cases like this indicate that diaphoretic elimination may be a potent factor in the treatment of some acutely maniacal patients.

I have had no experience in the matter of gastric lavage or irrigating the stomach by weak antiseptic solutions as a means of controlling putrefaction in that viscus, but would not hesitate to resort to it in appropriate cases. Dr. Frank Woodbury, in his interesting paper on "Infectious Dyspepsia and its Rational Treatment by the Antiseptic Method,"[2] refers to one case of incipient insanity in his practice apparently arrested by this agency.

In cases of mental disorder arising from renal disease, and deficient excretion by this channel, a milk diet, diuretics and diaphoretics will often give the most gratifying results. An elderly woman, now under treatment, whose mind became deranged from this cause, recovered her reason very promptly after taking an ounce and a half of compound jalap powder in doses of thirty grains every two hours. This did not produce catharsis, but proved abundantly diuretic and slightly diaphoretic.

VENESECTION IN CARDIAC AND ARTERIAL DISEASE.

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OWING to the discredit into which the practice of venesection has fallen during the last thirty years, one, at the present day, is almost expected to offer an apology for bringing the subject before a medical society. Such an apology exists in the fact that quite recently an interest in the subject has been revived, and at meetings of various medical societies and in current medical literature venesection has been discussed. Special reference may be made to a paper by Dr. Pye-Smith,[3] on "The Therapeutical Value of Venesection; Its Indications and Its Limits," read and discussed at a meeting of the Royal Medical and Chirurgical Society of London.

In this paper are recorded nearly fifty cases in which venesection had been practised in many different forms of disease, including bronchitis, broncho-pneumonia, croupous pneumonia, miliary tuberculosis of the lungs, thoracic aneurism, valvular disease of the heart, pericarditis, Bright's disease, apoplexy and epilepsy. The writer considered the indications for venesection in the order of their importance to be: First, cyanosis, with dilatation of the right side of the heart, whether from pulmonary or from some other form of obstruction to the circulation; secondly, the intense pain of thoracic aneurism; thirdly, uræmic and prolonged epileptic convulsions. Reference was also made to bleeding in fevers and inflammatory disorders. In the discussion that followed, the opinions expressed were in the main corroborative of the conclusions reached by the writer of the paper.

Since the opening of the Johns Hopkins Hospital, in May, 1889, we have had occasion to practise venesection on five patients, an account of which is subjoined.

CASE I. *Thoracic aneurism; venesection for urgent dyspnœa with cyanosis; temporary relief followed by death from exhaustion.*—William W., seventy-three years old, was admitted to the Johns Hopkins Hospital on May 18, 1889. He had been ailing for some months with cough, shortness of breath and pain in the right side of the chest and right shoulder; on admission he was found to present the signs of aneurism of the ascending arch of the aorta. He complained especially of shortness of breath and of intense pain over the right breast and down the right arm. With rest in bed and the use of iodide of potassium he improved slightly and the intense pain was somewhat alleviated, but at night he still suffered very much from dyspnœa and cough, for which morphia had to be used freely. On the evening of May 29th he had a more than usually severe attack of shortness of breath, accompanied by marked cyanosis and distention of the cervical veins. As his heart was beating strongly and regularly, it was considered that venesection would give him at least temporary relief, and, accordingly, fourteen ounces of blood were withdrawn from his right arm. This afforded him temporary relief: both the cyanosis and the dyspnœa became less, and he spent a more comfortable night. Shortly after the bleeding he had a profuse perspiration. He died from exhaustion two days later. The autopsy revealed a large saccular aneurism compressing the right lung, which was the seat of a chronic interstitial pneumonia.

CASE II. *Chronic nephritis, with dilated heart; extreme cyanosis; venesection, with temporary relief; death.*—Jeremiah B., forty-one years old, was admitted to the Johns Hopkins Hospital February 5, 1890. His illness had commenced six months before with shortness of breath, and three months later he had noticed that his legs were swollen. During November he had improved slightly, but since that time both the dropsy and the shortness of breath had gradually increased until the œdema involved his abdomen and arms. He had not noticed any change in the quantity or appearance of his urine. The condition of the patient on admission was as follows: Very plethoric and stout; general anasarca; respira-

[1] The London Lancet, No. 21 of vol. i., 1889, p. 1030.
[2] Journal of the Amer. Med. Assoc., vol. xv. p. 598.
[3] Abstracted in the Brit. Med. Journ., January 31, 1891.

tion a little labored, 44; pulse, 108, regular; no increase in tension. There was slight lividity of the lips and tips of the fingers and of the ears. The venules of the cheeks and nose were distended. There was a diminution of the area of lung resonance in the lower thorax in front, in the axillæ behind, and the breath-sounds at both bases were enfeebled. The cardiac dulness began at the third rib, but the inferior and lateral limits could not be made out. There was gallop-rhythm at the apex, a moderately intense systolic murmur in the anterior portion of the axilla, with accentuation and reduplication of the second sound at the pulmonary cartilage. The abdomen was very large, but there was so much fat that it was not possible to demonstrate any ascites. The urine was diminished in quantity, of a sp. gr. of 1028, and contained albumin and fatty, hyaline and granular casts. The patient was freely purged with salts and given half an ounce of the infusion of digitalis every four hours. During the next three days the urine progressively increased in qauntity, the dropsy was slightly diminished, and the heart-sounds became more distinct, though the pulse remained rapid. At midday, January 10th, after coughing up some bloody sputum during the morning, he had a sévere attack of dyspnœa, and when seen a few minutes later he was extremely cyanotic, the veins of the neck well distended, the breathing feeble and shallow, while the pulse could not be counted at the wrist. The heart-sounds were rapid and indistinct, and there was tremor and jactitation of the extremities. Venesection was deferred until 2.15 P.M., when eighteen ounces of blood were withdrawn. The relief was immediate, the breathing becoming easier and the cyanosis disappearing almost entirely. There was no return of the cyanosis or dyspnœa, but the patient died on the morning of the next day. An autopsy could not be obtained. It is probable that there were extensive hemorrhagic infarctions of the lungs.

CASE III. *Mitral regurgitation, with a dilated heart, irregular in action; cyanosis and dyspnœa; venesection, with marked relief; sudden death from syncope, six days later.*—Mark W., twenty-two years old, was admitted to the Johns Hopkins Hospital June 17, 1890. He had had three attacks of inflammatory rheumatism, the first occurring four years before, but had not shown any symptoms of cardiac mischief until three months previously to admission, when he began to be short of breath and to have palpitation on slight exertion. He had also suffered from vertigo and slight cough; his legs had been swollen for some days, and he was passing less urine than usual. Condition on admission: Face pale; slight blueness of finger-nails; œdema of the legs. There was orthopnœa. Respirations, 27. The pulse was intermittent, 36 per minute, only two out of a series of three beats of the heart reaching the radial pulse. There was slight impairment of resonance at the base of the right lung, with enfeebled breath-sounds. The whole of the left side of the chest was lifted with the cardiac systole, and there was throbbing in the neck and at the epigastrium. The apex impulse was forcible and diffused in the sixth intercostal space outside the nipple line. The area of cardiac dulness was increased in both diameters. There was irregularity in the rhythm and intensity of the cardiac beats, a loud whiffing systolic murmur at the apex, and marked accentuation of the second sound at the pulmonary orifice. The patient was ordered sulphate of strychnia, gr. $\frac{1}{60}$ t. i. d.; ten days later sparteine, gr. $\frac{1}{8}$, was substituted for this. There was some improvement in the pulse and the œdema partially disappeared.

On July 4th there were considerable cyanosis of the hands and lips, free perspiration, but not much dyspnœa. The pulse was very small and in marked contrast to the heaving impulse in the præcordial region. The heart's action was very irregular. Fifteen ounces of blood were withdrawn from the left arm. On the following morning the color of the patient was much better, the pulse was 96, of fairly good volume, the heart's action only slightly irregular, and there was no longer such disproportion between the cardiac systole and the pulse. The improvement continued until six days later, when the patient died suddenly in a syncopal attack. An autopsy could not be obtained.

CASE IV. *Arterial sclerosis; cardiac hypertrophy and dilatation; venous engorgement, with slight cyanosis, stupor and delirium; venesection; recovery.*—David B., fifty years old, was admitted to the Johns Hopkins Hospital December 16, 1890, suffering from cough, shortness of breath and dropsy, dating from fourteen weeks before entering the hospital. At that time he had been suddenly seized at night with shortness of breath and cough, and latterly the dyspnœa had been constant, with progressively increasing dropsy, with decrease in the quantity of urine passed daily. There had also been slight transitory mental disturbance. There was no history of rheumatism or syphilis. On admission he presented the following condition: Œdema of the lower extremities and of the right side of the trunk (he had been lying for some time on the right side); pulse, 116; vascular tension increased; respirations 44, breathing of the Cheyne Stokes type. There were bronchial râles at the bases of both lungs, but no dulness. The apex-beat was neither visible nor palpable, and the superficial area of cardiac dulness was not increased. There was fœtal heart-rhythm at the apex and gallop-rhythm at the fourth rib. There was no accentuation of the aortic second sound. The urine contained a small percentage of albumin, with a few hyaline and granular casts. With the use of digitalis, free purgation with salts and an occasional hot bath, the œdema rapidly subsided and the pulse became slower and of better volume. He still suffered from dyspnœa, however, and at night was very restless and slightly delirious. On December 23d he was not so well. His tongue was dry, his pulse more rapid and occasionally intermittent, and even in the daytime there were drowsiness and rambling. There was in addition considerable venous engorgement of all the superficial veins, with slight cyanosis and extension of the cardiac dulness to the right of the sternum. At 3 P.M. sixteen ounces of blood were taken from his left arm; the venous engorgement was lessened in a marked degree; the patient was restless until 3

o'clock in the morning, when he fell asleep. On the next day he was quite rational; there was still some dyspnœa, but his pulse was 96 and regular. During the three days following the bleeding he passed a very large quantity of urine. On January 7th he was quite free from dropsy, his mind was clear, he slept and ate well, and his pulse was regular, ranging from 60 to 70. He was discharged on this day at his own request. Three months later he called at the hospital and stated that he felt quite well and was at work.

Case V. *Mitral regurgitation, with dilated and irregular heart; extreme cyanosis; venesection; recovery.*—John B., forty-four years old, was admitted to the Johns Hopkins Hospital April 13, 1891, suffering from dropsy and shortness of breath. In the autumn of 1889 he had for three months suffered severely from inflammatory rheumatism, all his larger joints having been swollen and very painful, and in the same season of 1890 he had had an attack of typhoid fever. He gave no history of venereal disease. Four weeks before his admission to the hospital he had noticed that his feet were swollen. The dropsy increased rapidly; two weeks later he was quite short of breath—so much so that if he attempted to lie in bed he would choke. He had not complained of palpitation, his bowels were regular, and he passed about the same quantity of urine as usual. When seen, shortly after his admission to the ward, he was found to be cyanotic, sitting up in bed, and somewhat breathless. His pulse was from 90 to 100, small and irregularly intermittent. There was a wide area of heaving cardiac impulse, the apex beat being three fingers' breadth outside the left nipple. A loud, blowing, systolic murmur was heard at the apex, and was transmitted into the left axilla. The second sound was accentuated at the left border of the sternum. The lungs were clear, with the exception of a few mucous râles at the bases. There were enlargement of the liver, without ascites, and considerable œdema of the lower extremities. The urine was scanty, highly colored and albuminous; it contained some hyaline and finely granular casts. A milk diet, free purgation with salts, and tr. digitalis, ♏ xv. 4 q. h., was ordered. At midnight he was very cyanotic and breathing heavily. The radial pulse was just perceptible, only one heartbeat in every four or five being felt at the wrist. The præcordial impulse was heaving and irregular, and the heart sounds were loud. A bleeding of eighteen ounces produced immediate relief. The dyspnœa disappeared almost entirely, the cyanosis diminished, the pulse at the wrist increased in volume and frequency, and the patient was relatively comfortable for the remainder of the night. The next morning he was looking well, and sitting up in bed. There were still a little shortness of breath and blueness of the lips and finger-tips. The pulse was 96, of fairly good volume, but still irregularly intermittent. The upper limit of the cardiac dulness was at the third rib; transversely it extended from the right border of the sternum to the apex-impulse in the sixth intercostal space. There was some engorgement of the veins at the root of the neck. The auscultatory phenomena on the part of the heart and lungs were as described, and there was a slight elevation of temperature. The digitalis was discontinued, and was again given on the following day in smaller doses; two days later strychnine and strophanthus were substituted for it. From April 15th to May 1st there was irregularity in the volume of the individual beats, but no intermittency, and the urine was free from albumin and casts. On May 6th, after having been up and about for a week, he was feeling quite well. There was no œdema, lividity or shortness of breath, and he ate and slept well. The radial pulse was 80, small, irregular and once more occasionally intermitting. There was still a marked contrast between the force of the ventricular contraction and the volume of the pulse. The physical signs were not materially different from those observed the day after the bleeding. He was discharged from the hospital on May 6th.

The reported cases illustrate the value of bleeding, as a means both of affording temporary relief from distressing symptoms due to disturbances of the circulation and also of saving life and even restoring patients to comparative health. There is little to be added to Dr. Pye-Smith's conclusions as to the indications for venesection and its relative value in the various classes of cases which require its performance. Our experience has been, with one exception, limited to cases of primary cardiac or arterial disease, which are undoubtedly those in which most good may be expected from its use. Huchard[1] advocates small bleedings from time to time in the first stages of arterial sclerosis, and thinks that in this way it may be possible to lessen and even delay the evils resulting from prolonged high vascular tension. He insists particularly on the value of venesection in the later stages of the same disease, when the left ventricle is no longer able to cope with the increased peripheral resistance and volume of blood and the heart is in danger of sudden arrest. This may occur even when there is but little œdema or cyanosis, though there is usually engorgement of the right side of the heart and of the veins. In addition to its purely mechanical effect, venesection removes from the blood a considerable amount of toxic material which has accumulated in it owing to the imperfect performance of the functions of the kidneys and liver, these viscera being usually more or less affected by the general arterial sclerosis. The contra-indications to venesection in cardiac and arterial disease are few. Even when death is imminent the rapid abstraction of some ounces of blood not infrequently saves the patient. It is obvious that when marked ascites or pleural effusion coexists with cyanosis and distressed breathing the abdomen or the pleura should be tapped, and venesection delayed until it is ap-

[1] Huchard: Maladies du cœur et des vaisseaux. Paris, 1889.

parent whether either of these procedures will or will not afford relief. Large hemorrhagic infarctions of the lungs and extensive disease of the myocardium or of the coronary arteries, could such conditions be definitely ascertained, would probably be contra-indications, as even temporary relief could hardly be expected under such conditions.

CEREBRAL SURGERY.

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IN this day of surgical progress, operations of unheard-of magnitude are undertaken in regions of the body not long ago supposed to lie without the operative field. Especially is this true of diseases of the nervous system, which have heretofore been regarded as not amenable to treatment, but which are now removed or relieved by the surgeon's knife. The experimental researches and clinical observations of Ferrier, Horsley, Fritsch and Hitzig and others, have established the essential principles of cerebral localization, which, together with modern antiseptic and aseptic methods, have made it possible for the surgeon to invade diseased or injured brains. Brain surgery, although in its infancy, has been very progressive, until now the inaccessible areas of the brain have been narrowed down to the central regions of the base and the bordering convolutions, the corpora quadrigemina and the pons oblongata. (Charles K. Mills, *Brain*, July 18, 1889.)

The neurologist has been foremost in the diagnostic study of intra-cranial disease, but the fearless surgeon, with his technical skill, shares with the neurologist the rewards which have followed the united efforts of both in placing scientific cerebral surgery upon a firm and practical basis. My aim in this paper is to give a general review of what has been done in cerebral surgery. It is understood that the reader is cognizant of the principal facts pertaining to the surgical anatomy of the skull and brain, and it only necessary to add an outline of the established facts in cerebral localization.

The anatomy of the brain is still very defective, and the application of localization is exposed to much error; but from the results obtained by experimentation, clinical experience and pathological data, we are justified in drawing the following conclusions respecting the cells of the cerebral cortex: (1) The surface of the brain is the seat of all conscious mental action. Here, and here only, do impressions made upon the special senses become transformed into conscious appreciation of external objects. (2) The mental powers are represented by different combinations of memories of past events, stored in cells related to the special senses, and by the activity of other groups of cells that are probably situated in the frontal lobes. (3) The central convolutions of the brain (a part of the frontal and parietal lobes of each hemisphere) preside over motion and the memory of all motor acts of the limbs and body. The upper part governs the legs chiefly, the middle controls the upper extremity, while the lower presides over the complex movements of the tongue and lips necesaary to speech. The theory of centres exactly limited is probably not correct, for we have evidences of substitution of function when one centre is destroyed and its work is taken up by another. (4) The occipital lobes preside over the sense of sight and the memory of sight-pictures. Hallucinations of vision point strongly to a disturbance of function of the cells of these parts. (5) Parts of the parietal lobes not occupied by special centres of motion are probably associated with conscious perception of tactile impressions. (6) The temporal lobes are the probable seat of conscious appreciation of sounds, odors and taste. When these lobes are diseased, the memory of spoken words may be obliterated and hallucinations of hearing or deafness may be developed.[1] (7) The functions of other nerve-cells of the cortex are more or less open to controversy, while the functions of the cerebellum, pons Varolii and medulla oblongata are too complex to be fully discussed here. The region which concerns us most in the application of the principles of cerebral localization is the Rolandic zone or motor area. Diseases of the brain, situated in this locality, are more readily diagnosticated and are more amenable to treatment than when seated in any other region. The symptoms of localized cortical disease are divided into two classes, those caused by destruction and those caused by irritation. Destructive lesions produce paralysis, inhibit or obliterate sensation and impair the special senses. Irritative lesions produce spasm, tremor, contractions, hyperæsthesia, anæsthesia, pain and hallucinations of the senses. There are symptoms of a diffuse nature common to both forms of lesions, viz.: Headache, vertigo, vomiting, psychical changes, choked disc, coma.

In diagnosticating intra-cranial disease we must study each symptom separately and in association with others. In cerebral disease especially is diagnosis by exclusion unsatisfactory for surgical purposes. Familiarity with the cranio-cerebral relations is important. It is to-day an undisputed fact that every part of the cranial surface corresponds to a definite part of the cerebral surface. Therefore, to determine the location of our principal landmarks, so that we can undertake to map

[1] Ranney: Nervous Diseases, 1889.

out smaller areas, we must study the topographical relations of the cranium to the convolutions. Several methods have been suggested for establishing rules to guide us in localizing the fissures and convolutions. Hare's method seems the most practical and accurate. Dana (*Medical Record*, January 12, 1889; *Journal of Nervous and Mental Diseases*, June, 1890) has very explicitly given working rules for practical cranio-cerebral topography. By the aid of the cyrtometer we locate the principal landmarks, and from these we determine the other localities and areas. We can now understand the relations of surgery of the brain to the practical principles of localization and topography. Their application serves in the diagnosis and treatment of the various diseases of the brain coming within the domain of surgery, of which we may mention abscess, compression, tumor, cyst, fractures, hemorrhage, epilepsy, microcephalus, hydrocephalus, insanity and general paralysis.

The indications for surgical interference in cerebral disease are divided into two classes: (1) the existence of pressure symptoms, as in abscess, tumor, effusion, hemorrhage, etc.; (2) the existence of functional disturbances, such as epilepsy, inveterate headache, insanity, etc. (Keen). As a preliminary to all operations on the central nervous system, preparations should be made for several days previous to the operation in order to avoid shock, which is especially great in diseases of the nervous system (Dercum). Cerebral surgery is apparently the most difficult of all forms, and to succeed one must have a thorough knowledge of the technique. To the surgeon properly belongs the discussion of such procedures, but as any one of us may at any time be called upon to use the trephine, some consideration of this all-important operation in cerebral surgery—trephining—should be made here. "We are now," says Roswell Park,[1] "in a position in which we can boldly affirm, even in courts of law, that trephining, when properly done, is not of itself a dangerous operation. The condition which necessitates the operation constitutes the main element of danger. It is indicated in simple fracture with compression, compound fracture with depression, fracture associated with punctured or gunshot wounds, even in the absence of symptoms; coma, with signs of compression or contusion; laceration of soft parts, without fracture of the external table; hemorrhage, abscess, tumor, bone-abscess in the frontal sinus or mastoid process, purulent meningitis, acute infectious osteo-myelitis of the diploë, epilepsy, etc."

The Operation.—First of all, aseptic conditions must be established; the patient's scalp must be carefully shaved and cleansed. If no open wound exists, an incision, preferably U-shaped, should be made, so that perfect drainage will be assured when the patient lies on his back. The pericranium is then elevated or scraped back over the area of bone to be removed. The trephine should not be applied over vascular areas. The opening may subsequently be enlarged in any direction.[1] When it is intended to replace the button removed, it should be placed between folds of antiseptic gauze, and kept in a 2 per cent. solution of carbolic acid at a temperature of from 100° F. to 104° F. Before replacement a little notch should be cut for drainage, the pericranium sutured, and the scalp closed in the usual manner. Several methods have been proposed for filling openings made in trephining: re-implantation of the button, as suggested by Macewen; transplantation of bone from other parts of the patient (Seydel), and transplantation of bone from one animal to another. In either method, if the operation has been aseptic throughout (and in this branch of surgery it should be so more than in any other) perfect bony union will have taken place in a few days.

Trephining, when indicated, should be done early. In fracture of the skull, surgical interference is only justifiable when some well-pronounced or grave cerebral disturbance results. Then we may trephine and elevate the bone at the seat of pressure, or where the inner table, from its brittleness, may have become separated, with or without external fracture and injury to the brain.

In contusion of the brain we have, with the possible exception of cranial fracture, the most frequent cause of death as a result of injuries of the head as a class. In a paper read before the New York Medical Association last year Dr. Phelps thus summarizes his conclusions regarding cerebral contusion: "It may be either direct or by *contre coup*, and may be either limited or diffuse or attended by hemorrhage upon the surface of the brain. This last form may cause death by compression. The limited or diffuse form may cause early death by consecutive general hyperæmia, or later by the formation of cerebral abscess. The symptoms resemble alcoholic intoxication, for which the condition is usually mistaken.

Keen advises trephining when encephalitis follows contusion. He says: "We should treat such an inflammation precisely as we would treat it in other regions of the body, always remembering that in the brain, by reason of the bony case in which it is retained, it is impossible for an exudation or hemorrhage to find its way to the surface without surgical assistance." We should treat fractures of the vault without depression expectantly, but when encephalitis occurs the trephine should be used. Keen advises immediate preventive trephining when

[1] Roswell Park: Ref. Hand-book.

[1] Roswell Park: Med. Record, September 22, 1888.

depression exists; the harmlessness of trephining by modern methods is so assured that no patient should be exposed to the risks of immediate or remote consequences. In fractures of the base Nancrede[1] says: "In addition to elevation, disinfection and removal of fragments, we should fill by insufflation and packing all accessible localities." Fractures of the vault in children are of grave consequence. Simple fracture, involving the membranes and brain, may be attended by one of two possible complications, viz., a cranial gap, with the brain in direct apposition with the bone, pulsating at the bottom of the opening, or a false meningocele; the watery tumor may communicate with the interior of the skull, or the opening may close by bony or fibrous union. Meningocele may complicate simple or compound fracture or follow trephining or other operation on the brain. The presence of meningocele is proof positive that the lateral ventricles have been involved.[2]

Pressure exerted by cranial tumors is indicated by headache, vertigo, vomiting, epileptiform convulsions, apoplectiform attacks, psychic disturbances and choked disc. Headache is generally localized and usually frontal. It is often related to the seat of the tumor. In several cases coming under my observation I have seen persistent headache, with nocturnal exacerbations.

Vertigo is not always present. It is most frequent when the cerebellum is involved. Vomiting may be a pronounced symptom, but it occurs principally in cerebellar disease. The cerebellar gait, the vertigo, the vomiting and subsequent coma, with associated paretic symptoms, led me in one case to diagnosticate tumor. Death occurred, and post-mortem examination showed cerebellar abscess. Epileptiform and apoplectiform seizures are quite frequent, and are characteristic symptoms of tumor. Transitory hemiplegia may follow the apoplectiform attacks, especially when in association with gummatous tumors of brain. The psychic changes are principally of the maniacal or melancholic forms of insanity. Choked disc, when present, is more nearly a pathognomonic symptom of cerebral tumor than any other (Jacobi). Tuberculous tumors are not suitable for operation. Gliomata, when not vascular and rapidly growing, admit of ready removal. Cysts are favorable for operation. Fibromata of the membranes are most amenable to treatment. Sarcomata and carcinomata are not. Gliomata are usually seated in inaccessible regions of the gray matter and are apt to give rise[3] to apoplectiform attacks. Cerebellar tumors are not favorable for operation.

Cerebral abscess occurs chiefly in the temporo-sphenoidal lobe, or in the cerebellum, or in both together, as I have observed. The abscesses may be single or multiple, and acute or chronic. They are caused principally by extension of disease from the middle ear, or by traumatism; they may be secondary to erysipelas of the face or scalp or to the eruptive fevers. The symptoms are vertigo, anorexia, chills, elevated temperature, accelerated pulse, etc., cephalalgia, insomnia, disturbance of equilibrium; percussion may elicit sensitiveness over the region of the abscess. It is difficult to diagnosticate abscess, as I know from experience; the only certain method is by the use of an exploring needle in the region of its supposed existence. As a rule, the pressure symptoms will enable us to localize it. The treatment is to evacuate the abscess by trephining above and behind the ear, according to rules laid down by Bergmann. Macewen makes a second opening on a line with the bottom of the abscess. Nancrede[1] indorses this treatment, saying that it is necessary to facilitate drainage in washing out the abscess. A weak bichloride solution should be used.

The operation of linear craniotomy for microcephalus has been performed in this country, first by Keen,[2] later by Wyeth.[3] Lannelongue, of Paris, was the first to operate for the relief of this disease. His first case was greatly improved, but the intellectual acquirement was in a great measure due to the training received in the hospital. Wyeth's case improved quite markedly. I have not learned the results in Keen's case. All cases of microcephalus are not amenable to such treatment, for microcephalic brains show the effects of two entirely different conditions—premature closure of the sutures, which checks the active growth of the contained brain, and cessation of the growth of the skull because the brain from some cause has ceased to grow, the skull no longer receiving the stimulus of the growing organ within.[4] In the first class of cases an operation would no doubt relieve the conditions producing imbecility and allow the enfeebled brain to attain a larger and more natural growth; but the second class of cases would not be benefited in the least. My experience as assistant physician in the Pennsylvania Institution for Feeble-minded Children has led me to believe that whatever benefit cases of microcephalus would derive from such a surgical operation would be due to methodical and persistent training such as is pursued with all feeble-minded children. Such a child would, at best, in intellectual acquirement never approach a normal child of the same age.

[1] Keating's Cyclopædia of Diseases of Children.
[2] Dr. F. Hober: American Pædiatric Society, July, 1890.
[3] Annual, 1890.

[1] Keating's Cyclopædia of Diseases of Children.
[2] THE MEDICAL NEWS, November 29, 1890.
[3] Medical Record, February 21, 1891.
[4] A. W. Wilmarth: Alienist and Neurologist, October, 1890.

Hydrocephalus has been operated upon with more or less success. There are two varieties—external (when the effusion is in the sub-arachnoid space), and internal (when the effusion is in the ventricles). Conner[1] advises in external hydrocephalus that only a moderate amount of fluid be drawn off at a time with an aspirator. For internal hydrocephalus Keen has devised an operation for draining the ventricles, which is briefly as follows: Lateral trephining, large opening one and one-quarter inches behind the auditory meatus and one and one-quarter inches above Reid's base line; puncture at a point two and one-half inches directly above the opposite meatus.[2] The puncture opens into normal lateral ventricles. The objection to this operation, says Conner, is the reaccumulation of fluid which invariably follows. Of the seven cases reported up to September, 1890, five had died, showing a high rate of mortality; but Keen does not regard this as discouraging, considering the danger of the primary condition. An interesting case is reported by Ayres,[3] in which paracentesis was done for internal hydrocephalus. The child was a blind imbecile. Great improvement followed the operation. The eyesight was restored, the mental condition improved, but the child could not talk. The subject of tapping the ventricles was last year discussed before the British Medical Association. Mayo Clark regarded the operation as justifiable in cases in which coma developed. Wheelhouse, of Leeds, said that the operation should not be done in chronic hydrocephalus. When the operation is performed it should be done with strict antiseptic precautions.

Gunshot wounds of the skull and brain have interested surgeons since the invention of gunpowder. In this day of perfected firearms they are troublesome, severe and dangerous. Professor Bryant, of New York, states that the mortality depends greatly on the removal or non-removal of the foreign body; recoveries are greater by 17 per cent. when foreign bodies are removed. This applies especially to the frontal, parietal and temporo-sphenoidal lobes. When a bullet lies above the plane of the lateral sinus the chances of recovery are fair; but when below, death is inevitable. When the cerebellum is injured, death is the usual result, irrespective of treatment. It is often very difficult to locate the bullet in the brain. Numerous instruments have been devised; none, perhaps, is more simple or more satisfactory in action than the telephonic probe devised by Dr. John Girdner, of New York. It is not universally used because the Bell Telephone Company will not permit its manufacture. The improvised instrument is used as follows: One copper wire is attached to a probe, the other to a piece of metal held in the patient's hand, and an ordinary Bell telephone receiver is placed to the ear. The metal plate should be of the same material as the probe. When the probe comes in contact with the bullet a signal is given. The signal was given in all of eight cases examined with this instrument.

Hemorrhage, either arterial or venous, arising in the course of intra-cranial operations is often troublesome. In the surgery of the skull it mostly takes place in two situations, viz.: externally or internally to the broad aponeurosis of the scalp and in the sub-aponeurotic fossæ; in the latter bloody effusions, hæmatomata, are most frequently met.[1] Bleeding from the diploë may be troublesome, but it can be controlled by pressure or by plugs. Intra-cranial hemorrhage may prove serious from its location and duration. It may be supradural, subdural, cortical and intra-cerebral. Supradural and subdural hemorrhage is usually associated with fracture. Cortical or subcortical hemorrhage has its source in the cerebral arteries and most frequently in the cortical system of the middle cerebral.[2] Cortical hemorrhage is rare, meningeal hemorrhage frequent. Intra-cranial hemorrhage is becoming more and more subject to treatment at the surgeon's hands. When subdural or epidural, the clot will not be absorbed, and surgical interference is justifiable (Dennis). Manley is convinced from experience that in cases of cranial lesions attended with intra-cranial hemorrhage, trephining and displacement of the clot are illogical and constitute dangerous practice[3] unless there are well-defined indications. Osler says that intra-cranial hemorrhage, not traumatic, is beyond the province of surgery; while Chambonier[4] gives reports of thirty-one cases of non-traumatic hemorrhage operated upon by him without a death. He also states that hemiplegia and muscular contractions have been relieved by the removal of old clots. The symptomatology of hemorrhage is briefly as follows: Motor and sensory paralysis, varying in extent, duration and degree; disturbance of consciousness and of the special senses; abnormal attitude of the head and eyes; tremor; changes in the pulse, pupils, temperature and respiration; abnormal phenomena of the bladder, rectum and kidney; and mental impairment.

Starr says that no definite statements regarding the advisability of surgical interference in Jacksonian epilepsy can be made. We may relieve, but in no case can we promise cure.[5] To afford relief

[1] Keating's Cyclopædia of Diseases of Children.
[2] W. W. Keen: Medical Record, September 20, 1890.
[3] Pittsburg Medical Review, March, 1890.

[1] T. H. Manley: Brooklyn Medical Journal, October, 1889.
[2] C. K. Mills: Brain, July, 1889.
[3] Trans. New York State Medical Association, October, 1890.
[4] Guillard's Medical Journal.
[5] Starr: Familiar Forms of Nervous Disease, 1890.

in epilepsy, trephining has been done since prehistoric times, but it is as yet by no means established in what degree it has proved successful as a curative measure. The actual number of cases of traumatic epilepsy is not as great as statistics would lead us to believe. Fits may cease for a longer or shorter period after trephining, just as they do after almost any surgical operation, to return with usual or increased severity. Ferrier[1] says that at least one year should elapse without recurrence of fits before it would be safe to pronounce a case cured. In conducting the operation it is often impossible to recognize the sulci and convolutions and to locate the discharging lesion. In such case resort may be had to the faradic current, which, when weak, does no harm to the cortex. Keen has devised for the purpose an electrode which is as unique as it is serviceable. Hughlings-Jackson advises that in all cases of focal epilepsy, depending on organic disease or not, the discharging lesion should be excised. In all cases excision should be as complete as possible, and all irritable portions of the brain cortex be removed to prevent the recurrence of spasms. Spasms occurring after such a precaution has been taken are a result of the epileptic habit or of irritability and instability of neighboring centres.[2] When brain pressure exists after trephining, the button of bone is left out. Marked amelioration has followed such procedure.

Operations for the relief of insanity and general paralysis have been undertaken, but with no great success. In general paralysis three operations have been reported—two in England by Drs. Shaw and Cripps,[3] and one in this country by Dr. Charles G. Wagner,[4] of Utica, N. Y. Temporary improvement followed in all, but death ultimately resulted at periods varying from a few weeks to a few months. Dr. Wagner admits that, while the utility of the operation is not fully established, yet he regards the improvement which followed in the cases operated upon as a warrant for further trial of trephining in general paralysis.

In summing up what can be done in cerebral surgery I will quote the conclusions of a report read before the International Medical Congress, 1890, by Victor Horsley, of London, one of the foremost surgeons and experimenters in this line of work:

1. Operation should be done in every case of brain injury. It is the only means of restoring the patient to a normal condition and may prevent epilepsy and dementia.

2. In every case of intra-cerebral hemorrhage, seen within four hours of the apoplectic attack, the common carotid artery should be tied.

3. Trephining should be done in cases of headache refractory to all other measures.

4. Cerebral gummata should be removed; iodide of potassium palliates but does not cure them.

5. Tubercles should be removed when practicable.

6. Operation should be performed when other tumors are present, even when multiple, if relief is not obtained from other measures in six weeks.

7. Operation should be performed for athetosis and other spasmodic affections.

8. Operation should be performed for Jacksonian epilepsy, after first testing the cortex with the faradic current to locate the point of origin of the convulsion.

9. Operation should be performed for fracture of the vertebral column when compression exists.

10. Operation should be done for paraplegia from spinal caries.

Horsley represents aggressive cerebral surgery. Perhaps he is an extremist, or possibly we have not yet awakened to the possibilities of operative surgery in diseases of the brain and spinal cord.

[1] Ferrier: Brain, July, 1889. [2] Ibid.
[3] British Medical Journal, November 16, 1889; June 14, 1890.
[4] American Journal of Insanity, July, 1890.

RENAL DISEASE AND URÆMIA ATTENDING ACUTE FACIAL ERYSIPELAS.

BY JULIUS L. SALINGER, M.D.,
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THE following case demonstrates the relation of acute facial erysipelas to disease of the kidney, and shows the necessity of paying the most careful attention to the renal function in acute erysipelas:

Mrs. G., aged fifty-seven years, tall and of good physique, weighing 165 pounds. Thirty years ago had an attack of inflammatory rheumatism, followed by an aortic regurgitant murmur; she had been previously well, and had never had any other complaint except an occasional sick headache. For three days she had been suffering with sharp pains in the large joints, but without heat, swelling, or any rise of temperature. Her pulse was 70, of fair strength and volume, and the temperature was 99°. I ordered her 15 grains of sodium salicylate every four hours, and in three days she was able to leave her bed and be about, all pains and aches having disappeared. Her temperature had reached 100° at no time during her illness.

Two days after the patient had left her bed I was sent for. The patient complained of pain and a burning sensation of the alæ of the nose and of the right cheek. This, following a severe chill, had come on suddenly during the night On inspection there was a scarlet-red rash, slightly raised, with a well-defined border. The parts about the eruption were hot and œdematous. The pulse was 120, and feeble, the temperature being 102½°, which in the evening of the same day rose to 104⅕°. Upon the most careful examination I was unable to discover the slightest history of traumatism. I recognized

the disease as facial erysipelas, and adopted a plan of treatment introduced by Professor J. M. Da Costa—the administration of pilocarpine hypodermatically. In this instance, however, on account of the old valvular difficulty, I ordered pilocarpine, grain $\frac{1}{6}$, by the mouth, every four hours. The eruption was dusted with bismuth subnitrate.

The eruption spread rapidly, so that on the morning of the fourth day of the disease it involved the entire scalp and the face, with the exception of the chin. Both eyes were closed, and greatly swollen. The patient suffered great pain and smarting, complaining very much of occipital headache, insomnia and nervousness. There was complete anorexia. She complained of considerable pain in the lumbar region and in the loins. The temperature was very variable, ranging between $102\frac{1}{2}$–$105\frac{3}{5}°$, and at one time during the disease it reached $106\frac{1}{5}°$, the evening temperature being always higher than that of the morning. The pulse throughout was quick, feeble, occasionally intermitting, and ran from 120 to 150 per minute.

The urine was examined daily, the first three days being normal, and the urates becoming much more marked as the disease advanced. On the morning of the fourth day albumin appeared. There were no tube-casts. On the fifth day the existence of albumin became marked, and hyaline tube-casts were found. On the seventh day albumin was one-half by bulk in the test-tube. The patient was now passing four ounces of urine in twenty-four hours. She took very little nourishment, and was generally in a comatose condition, with low muttering delirium, from which she was raised only with the greatest difficulty. These symptoms increased during the night. Professor Da Costa now saw the case with me. On the eighth day the patient had four uræmic convulsions that began with twitchings of the muscles of the face, thence extending to all parts of the body. The convulsions were very violent. Following the convulsions there was the profoundest coma. The first of the uræmic seizures was by far the most severe, and lasted fully one hour. Some of the urine was drawn after the first convulsion; sp. gr. 1022, reaction acid, albumin one-half by bulk, no sugar; epithelial, granular and blood casts. The granular and epithelial casts were very numerous. The spleen was decidedly enlarged. Swelling of both feet now set in. The patient was put on the infusion of digitalis, ʒij every two hours.

On the eleventh day considerable improvement was noticed. She was now passing twelve ounces of urine, and the eruption began to fade. The temperature was $101\frac{1}{2}°$. She was still in a semi-comatose state, but could be easily roused, after which she would again relapse. The albumin was diminishing, but tube-casts were still present. From this time the improvement was rapid. The eruption faded more each day, the urine increased in quantity, and the albumin diminished. On the twentieth day the patient passed a little over one quart of urine, albumin and tube-casts being still present. All traces of eruption were gone and the patient was able to leave her bed, although she was still very weak. Her temperature was normal.

Two days afterward the patient complained of pain in the throat and difficulty on deglutition. On inspection the throat was found to be red and swollen. The tonsils were enormously enlarged. She complained of headache and pain in the ears. The temperature was $102\frac{1}{2}°$. The pulse was 100. The tonsillitis, for such the throat condition undoubtedly was, lasted six days. Pus formed in each tonsil, and after being evacuated the patient recovered, although a tender condition of the throat remained for some time afterward. All traces of the erysipelas were gone, the desquamation having been thorough. Considerable thickening of the skin had taken place. Albumin and epithelial casts still persisted in the urine, and are present to-day after a lapse of two and one-half years. The patient lost fourteen pounds during her illness.

The treatment consisted in giving pilocarpine gr. $\frac{1}{6}$ in pill every four hours. When the kidney symptoms became marked the pilocarpine was discontinued. Inf. digitalis ʒij every two hours was given, and dry cups were used over the kidney.

The tonsillitis was treated in the usual manner by guaiac, etc. In acute facial erysipelas I have seen pilocarpine hypodermatically do wonders. After setting up considerable sweating the eruption has disappeared in three days. But it can be given with safety only to the strong and robust.

My reasons for narrating this case at length are to call attention to some symptoms which are of great importance, and are usually overlooked. For instance, the kidney disorder is not mentioned in the majority of our text-books, and where it is mentioned but slight notice is taken of it, and it is quickly dismissed as a slight complication. Da Costa ("Internal Complications of Acute Erysipelas," *Amer. Journ. Med. Sci.*, Oct., 1877) was the first to call attention to the constancy of this symptom. It occurs in nearly every case of erysipelas, certainly in every well-marked case. It even occurs in traumatic erysipelas. It is not an early symptom. About the fifth or sixth day of the disease a trace of albumin will be found in the urine. This trace will remain for several days, and disappear as the case improves. If, however, the patient should get worse, and the disease spread, the albumin increases in quantity and tube-casts begin to make their appearance. I have observed this in five different cases. The amount of albumin in this way becomes a guide to prognosis. It always reappears in a relapse, although it is usually not so marked nor so constant as in the original attack.

The albumin may be explained in several ways. It may be due to the general derangement of the blood, such as we find in the low fevers and in some forms of rheumatism. But a more likely view is one that is borne out by the post-mortem appearances of the kidneys. After a death from erysipelas the kidneys are found engorged with blood, congested, and even in a state of parenchymatous inflammation—

in other words, a true acute or subacute nephritis. (Ponfick, *Deutsch. Klin.*, No. 20, 1868.) It would be very difficult to account for such a large amount of albumin and tube-casts except by the fact that a true inflammation of the kidney takes place, as in the case of scarlet fever, though generally of a much milder type. This calls to mind the analogy between inflammation of the skin and disease of the kidney. There is not a single true acute inflammation of the skin in which we do not find albumin in the urine. The intimate physiological connection between the skin and the kidney readily explains this. In scalds and burns we find albumin in the urine, just as in the same connection we find ulcers of the intestines (principally of the duodenum). To make the connection still closer we also have ulcers of the duodenum and of the other intestines in acute erysipelas. Larcher (*Arch. Gén.*, 1864) reports two cases; Malherbe (*Arch. Gén.*, 1865) reports one case.

The uræmic convulsions that occurred in this case can of course be explained by the condition of the kidney and the albumin circulating in the system. I have not been able to find another case of erysipelas in which uræmia occurred. It must be set down as a rare complication. Œdema of the legs occurs whenever the amount of albumin becomes excessive, and has frequently been observed. Friedreich (*Klin. Vorträge*, No. 75, 1874) states that swelling of the spleen is quite common in erysipelas. Heart murmurs occur, and throat complications are also often met with.

It seems, then, that in acute erysipelas the symptom of most importance after the eruption is the albuminuria. By observing whether the albumin is increasing or diminishing we know how our case is progressing, and that whenever the disease assumes a graver type it is necessary to pay most particular attention to the condition of the kidney.

ON THE RELIEF OF CHRONIC CATARRHAL DEAFNESS BY EXCISION OF THE MEMBRANA TYMPANI AND THE TWO LARGER OSSICULA.

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SINCE the treatment of chronic catarrh of the middle ear, with its attendant deafness, tinnitus aurium, and vertigo, forms about three-quarters of the aurist's work, and as the results are very often unsatisfactory, I am induced to publish the following case as illustrative of the benefits of a new treatment of this hitherto intractable aural malady. Let me premise this short account by the statement that I have been induced to perform the operation of excision of the membrana and the two larger ossicula in chronic catarrh of the middle ear, because I believe that what we have to contend with in these cases is ankylosis, in whole or in part, of the conductors of sound lying in the middle ear, incurable in any other way. The relief obtained in the case I am about to narrate can be explained in no other way than that the removal of the ankylosed membrana, malleus and incus permits the stapes to vibrate more freely in its oval window. If the stapes is also ankylosed, the relief of deafness is slight or is entirely wanting, though even in such a case the tinnitus and vertigo, as shown in a case already reported by me,[1] may be entirely and permanently relieved.

July 15, 1889, Mrs. X., twenty years of age, stated that eighteen months previously she had camped out in Syria. She found it very damp and cold at night and took a severe cold in her head. Since then she has had pulsating tinnitus and increasing hardness of hearing in her left ear, with fulness in the head and at times vertigo from the excessive tinnitus. Upon returning, her family observed that her voice sounded as if she had a cold in her head. During the past year she underwent treatment of the fauces at the hands of an oculist, who also inflated the ears by Politzer's method, but without benefit; in fact all the bad aural symptoms increased.

When first seen by the writer her condition was as follows: Left membrana tympani retracted and depressed, especially over the incus-stapes joint. Hearing in the left ear, four feet, for isolated words of ordinary conversational tone. There was a constant, pulsating tinnitus in the left ear, with some slight constant singing tinnitus in the right ear. The Eustachian tubes were pervious to inflations. The nares showed general, active, hypertrophic catarrh. The pharynx was in good condition.

Treatment.—Dobell's spray was used by patient once daily at home. In the course of a fortnight the nares looked better and the tinnitus in the right ear became much less. The tinnitus in the left ear, however, was no better. The catarrhal symptoms grew worse by September, 1889, and from this time until March, 1890, treatment consisted in the use of Dobell's spray by the patient at home, and in injections into the Eustachian tubes by means of the syringe-catheter, once or twice a week, by me. The hearing in the left ear, however, diminished to *six inches* for isolated words and the tinnitus was great and annoying. The hearing in the right ear remained very good and the tinnitus very slight.

By August, 1890, as the sprays to the nares and the injections into the Eustachian tubes did no good, and as the hypertrophies from vasomotor paresis remained undiminished and the nasal respiration was impeded, each lower turbinated mucous cushion was incised at three points, one behind the other, at six different times by means of the galvano-cautery. This permanently reduced the hypertrophies, restored the nasal respiration, the catarrhal

[1] The American Journal of the Medical Sciences, February, 1890.

symptoms in the naso-pharynx becoming better, but the ear-symptoms remained unimproved.

In March, 1891, the hearing in the left ear was only six inches for isolated words and the pulsating tinnitus very great, with sudden accessions, which induced great vertigo. It was therefore decided to perform excision of the membrana tympani and the two larger ossicula in the left ear.

On March 5, 1891, the patient was etherized, and under illumination of the ear by means of the electric head-lamp, an incision was made through the membrana tympani, comprising its upper posterior quadrant, and the incus exposed. I then passed a small oval blade, two mm. long, set at right angles to the shaft, behind the incus and severed the incus-stapes joint; I drew the incus a little downward with the blade of the knife, and seizing the incus with forceps lifted it from the tympanic cavity. Then I excised the rest of the membrana about the periphery and withdrew the malleus and the membrana from the auditory canal. I dressed the ear with a tampon of bichloride cotton placed about half-way down the canal. The next day there was no reaction, but the hearing was now *four feet* for isolated words. The tinnitus was not diminished. The ear had lost its stopped-up feeling and all sensation of pressure in it had gone.

On the third day after the operation, after exposure to cold wind, the ear began to bleed a little, and finally a glairy, transparent, mucus-like discharge set in, and continued for about six weeks, when the regeneration of the membrana tympani became complete. On April 29th the new imperforate membrana was plainly seen, somewhat congested. Hearing for isolated words was now *four feet.* The tinnitus was still considerable. On June 4th the new membrana was uncongested and bluish. Hearing for isolated words was *twelve feet.* Pulsating tinnitus and vertigo had ceased. There was some slight, constant tinnitus if the patient listened for it, but no sensation of fulness in her left ear. The patient says she can hear conversation of a companion sitting on the left side without turning around, as she had to do before the operation.

I would call attention first to the improved hearing (from six inches to four feet) immediately after the operation, and also to the disappearance of the sensation of pressure in the ear, so annoying before the operation. Doubtless, the latter sensation was due to the pressure from retraction of the membrana and ossicula.

Secondly, note the progressive improvement in hearing, notwithstanding regeneration of the membrana tympani. The stapes, being now unimpeded by the retraction of the membrana and ankylosed malleus and incus, vibrates under sonorous waves, notwithstanding the intervention of a new membrana.

Thirdly, and with emphasis, I would call attention to the entire relief from pulsating tinnitus and attacks of dizziness. The relief of the vertigo is due to the removal of the mechanical pressure exercised by the in-drawn malleus and incus upon the stapes. The latter consequently being freed from impaction in the oval window, no longer compromises the labyrinth-fluid and irritates the motor filaments of the auditory nerve. The tinnitus is diminished because the congestion in the middle ear, due to the irritation brought about by the above-named retraction and impaction in the oval window, is removed.

ORIGINAL LECTURES.

APPENDICITIS. CASTRATION FOR SARCOMA OF THE TESTIS. WIRING FOR COMMINUTED FRACTURE OF THE PATELLA.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital.

By CHARLES McBURNEY, M.D.,
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Two cases of appendicitis were shown. The first patient was a man, twenty-eight years old, who began to have slight pain in the right iliac fossa two weeks previously. Although suffering pain, he continued to go about until presenting himself at the hospital. There was a good deal of pain and tenderness in the right iliac region, with some irritability of the bladder. There had been no vomiting; the pulse was 90 and the temperature 99° F. The bowels had moved regularly up to thirty-six hours previously. At the first examination pressure made with a single finger, at a point about two inches to the inside of the spine of the ilium, elicited marked tenderness. This point of tenderness is of much diagnostic value in distinguishing between disease of the vermiform appendix and inflammatory disease of other parts. There was slight tenderness toward the pubes and unusual resistance to palpation over the right iliac fossa. In such cases the diagnosis is often most difficult; but accepting its correctness, the question of the time to operate becomes important and deserving of thoughtful deliberation. Early operation is to be recommended; because, although such intra-peritoneal collections of pus may long remain quiescent, very slight traumatism or inconsiderable interference with the general health might cause a rapid development of inflammation with abundant formation of pus, followed occasionally by perforation into the peritoneal cavity. There is no possible way of knowing beforehand what might happen in these cases. The operation is dangerous, and, owing to firm intestinal adhesions, oftentimes difficult; but the danger of the operation is considerably less than the risk of leaving the case alone.

An incision along the edge of the rectus muscle extending from two inches above the anterior spine of the ilium down to within one-quarter of an inch of the deep epigastric artery, would pass through the external oblique aponeurosis, and the abdominal wall would be incised along this line, as the hemorrhage here would be slight. The cavity could then be opened and search made for the diseased organ; if it were not readily found the base of the appendix could be sought at its point of origin from the cæcum. If the appendix can be isolated, it should be ligated within one-eighth of an inch of the

intestine and then excised. The stump, before being returned, should be disinfected by the application of the actual cautery. As this stump is very minute, the plan of covering it with peritoneum is not readily accomplished, and offers no advantage on the ground of safety.

In the present case, on passing the finger into the peritoneal cavity, the appendix, much distended and surrounded by pus, was found to pass inward and behind the head of the colon, the surrounding tissues being generally adherent. The appendix was isolated by gently breaking up the adhesions with the finger, was ligated and excised, and the stump cauterized. A drainage-tube was inserted, and several sutures were passed through the entire thickness of the abdominal wall, so as to coaptate a portion of the wound, the remainder being packed with iodoform gauze. The intestines pressed against the gauze packing, but within twelve hours adhesions would probably be formed, shutting off the general peritoneal cavity from the wound. The dressing, which consisted of sublimate-gauze and cotton, should not be touched until the third day, unless there be pain or a rise of temperature; then the packing should be removed and renewed. Little or no irrigation would be required. The result in this case justified the emphasis which had been laid upon the importance of early exploratory incision; for, although this patient had been able to go about most of the time and had had a temperature of only 99° F., an abscess was found behind the intestines which was liable to rupture at any time.

The second case, although also one of appendicitis, differed materially from the first. The patient, a boy seventeen years old, began to have pain in the right inguinal region ten days previously, but did not go to bed until three days later, and had no medical attendance for two days more. With the exception of continuous pain in the right iliac fossa he had been fairly comfortable. He has had no vomiting and no abdominal distention; his temperature has ranged between 101° and 102° F. Examination disclosed, close to the iliac spine and along the outer half of Poupart's ligament, over an area of about two and a half inches wide, the existence of considerable tenderness, with slight resistance and percussion dulness; but fluctuation could not be detected. The characteristic point of tenderness, as described in the preceding case, was also present in this. A diagnosis of intra-peritoneal abscess from appendicitis was made. Inflammatory adhesions had probably formed between the surrounding intestines, so that when perforation took place the extravasated fluid had been shut off from the general peritoneal cavity. Formerly such cases were allowed to open spontaneously by a very slow process, or else rupture into the peritoneal cavity, giving rise to fatal suppurative peritonitis. It remained for Dr. Willard Parker to show that when such abscesses had reached a certain size they could, like any other abscess, be opened with safety any time after the seventh or tenth day; but until quite recently it was erroneously considered that these abscesses were situated outside of the peritoneum, the abscess having formed next to the appendix or the head of the colon, then working its way through into the cellular tissue between the peritoneum and the iliacus muscle, and in this way up to the groin. This occurs rarely; almost all such cases were originally intra-peritoneal; but a sac was formed for the abscess by adhesions between the viscera covered with peritoneum and the anterior and posterior abdominal walls.

Since, in this case, the abscess was already formed, there was no propriety in making an incision into the general peritoneal cavity. The incision was made close to Poupart's ligament so as to enter the abscess directly. At this late stage there was no use in looking for the diseased appendix. For two reasons exploratory puncture previous to the operation is not to be commended; first, because the puncture often fails to find fluid when present, and secondly, because the operator who depends upon this test and fails to find pus would hesitate to operate. The first puncture might injure an important viscus, and if on withdrawing the needle through the peritoneum pus were reached, infection might take place. After having made an incision there is not so much objection to an exploratory puncture in order more definitely to locate the pus; but even then, the procedure is not necessary. Close to the peritoneum œdematous tissue, suggestive of the presence of pus, was encountered. The abscess was found and evacuated; on introducing the finger into its cavity two small concretions, which had given rise to the trouble, were found and removed. The walls of the abscess had been formed by adhesions in the manner described, and the agglutinated convolutions of intestines could be felt. After irrigating the abscess cavity with boro-salicylic solution, a drainage-tube was inserted and the cavity packed with iodoform-gauze. If in this instance the incision adopted in the preceding case had been employed, it would have been necessary to evacuate the abscess through the general peritoneal cavity, thus greatly increasing the danger.

The next case presented was that of a boy about eighteen years old, who had a tumor of the right testis. About one year before, the testis was injured, immediately swelling to one-half its present size. The mass, which was very tender, was extremely heavy, very dense, semi-elastic, and extended up beyond the external abdominal ring. The spermatic cord was somewhat enlarged. While there was a possibility of the case being one of hæmatocele, it was more probably one of sarcoma. An incision was made over the anterior surface of the tumor and the parts rapidly dissected away. After extending the incision up to the internal ring, it was found that the growth extended still further and involved the peritoneum where it was reflected from the cord. The diseased organ was then removed and the orifice in the peritoneum closed. The remainder of the inguinal canal was then sutured with catgut, the skin with silk. Rubber drainage-tubes were inserted above and below, and a small portion at the upper part of the wound, which extended down to the peritoneum, was packed with iodoform-gauze. After its removal, the tumor was found to be a typical sarcoma. There will probably be a rapid recurrence of the growth, as it was impossible to extend the dissection higher without taking unwarranted risks.

A man, twenty-eight years old, was admitted to the hospital with a simple transverse fracture of the patella. In thirteen weeks, at the time of his discharge from the hospital, the dressings were removed and the fragments were found close together and firmly united. The patient was able to walk about with a fair degree of

motion. Several weeks later he fell, and although he experienced very severe pain in the affected knee, he walked around for two days before returning to the hospital. At the time of his second admission there was an enormous effusion into the joint with much discoloration, so that it was impossible to make out the exact nature of the injury until about ten days later, when it was found that he had refractured the lower fragment, while the original ligament remained intact, and was less than one-quarter of an inch long. In uncomplicated cases wiring the patella is objectionable, but in such a case as this—the patient being a laboring man—in which firmness of the joint was of special importance, the procedure became a most proper one.

An incision over the seat of the injury showed extensive extravasation of blood. The edges of the fragments required to be slightly freshened. After wiring, the wound was sutured with catgut and a small rubber drainage-tube inserted at each angle. A compress and bandage and a wooden posterior splint, with a footboard, completed the dressing.

CURRENT LITERATURE.

ACCIDENTS RESULTING FROM INTRA-UTERINE CAUTERIZATION WITH CANQUOIN'S PASTE.

Pichevin (*Nouvelles Archives d' Obstét. et de Gynécol.*, No. 2, 1891) concludes that the time has come to refute the arguments which have been advanced to legitimize the employment of a therapeutic measure which theory condemns in advance. He feels that it is necessary to furnish some facts, the eloquence of which is such that men of good faith and physicians desirous of the interest of their patients may renounce positively a proceeding which, as someone has written, is "a manifestation of atavism." Many who have employed caustics in the uterine cavity at some time in their practice are strongly opposed to this method of treatment to-day. Avan spoke of cauterizations of the cervix with the paste of the chloride of zinc, but was far from recommending this treatment. Bennet makes mention of the retractions which he had observed in women whose cervical canal had been cauterized. Scanzoni was strongly opposed to the employment of the caustic of Filhos, and Nonat reports great constriction of the utero-vaginal orifice following the use of Vienna paste. Bernutz and Goupil, after treating a young woman suffering from metritis by Vienna paste, reported an occlusion of the neck with menstrual retention. Emmet, Schröder, Martin, Mundé and others, all record themselves as opposed to cervical and intra-uterine cauterizations.

The advocates of the treatment by cauterization are strong in their opposition to the method of treatment by curetting the uterus. They claim that the latter is an operation which necessitates prolonged and rigid antiseptic precautions; that it places the surgeon under the necessity of making a previous dilatation; that it demands a chloroformization, which is "always formidable;" that it gives rise to a loss of blood which is at times very great; that it is a rather grave and complex operation; that it compels the surgeon to practise forcible depression of the uterus; that it is not successful when the uterus is retro-displaced; that it does not give better results than the other procedures which have been advanced for the cure of endometritis; and, finally, that it causes atresia. In answer to these propositions, Pichevin declares that *curage* of the uterus has been adopted by the immense majority of surgeons. Antisepsis, he says, is beyond doubt indispensable before, during and after the operation; slight dilatation is useful, but not indispensable. As for chloroformization, it may be omitted; but for the sake of the patient it has become the custom to resort to anæsthetization. The quantity of blood which escapes during and after the operation is absolutely insignificant. Moreover, hemorrhage—when it exists before the intervention—is arrested as by enchantment in the very great majority of cases. The abrasion of the uterine mucosa with a dull or cutting curette is not a complex operation. There is nothing more simple. Forcible depression of the uterus is not necessary. It suffices to fix the cervix with the aid of a small forceps. When the uterus is retro-displaced, the metritis will be cured under the influence of the curette, but it is necessary to replace the organ in its normal position. The abrasion of the uterine mucosa is not an infallible method of treatment for endometritis, but no procedure can be compared to it. As to subsequent atresia, Pichevin has never observed it in his practice.

On the other hand, the apostles of intra-uterine cauterization claim the following advantages for Canquoin's paste in the treatment of endometritis:

1. It is unnecessary to perform minute and prolonged antisepsis.

2. It is unnecessary to practise a previous dilatation.

3. It is unnecessary to anæsthetize the patient. The introduction of the stick of Canquoin does not occasion any pain. As to consecutive pains, they are rare, ordinarily but slightly marked, and of short duration.

4. The treatment does not necessitate a long rest. The patient is cured at the end of some days.

5. There is no hemorrhage produced by the cauterization.

6. Atresia does not result, or if it is noticed it is an exceptional occurrence. In any case, the cervical constriction is not special to this mode of treatment.

7. The intra-uterine cauterization is efficacious. The cure obtained from the stick or pencil is real and durable.

8. The innocuous nature of this intervention is undeniable.

9. The introduction of the stick or pencil of chloride of zinc into the uterus is simple and easy.

To these propositions Pichevin offers the following refutations: While Polaillon strongly advocates the employment of intra-uterine caustics, he admits that antiseptic injections are indispensable while the scar is forming and eliminating itself, and during all

the time necessary for the cure. Dumontpallier likewise says that the day of the operation being determined, frequent vaginal injections, about three *per diem*, should be made before the operation, employing a solution of sublimate 1 to 2000 or 1 to 3000.

Grandmaison and Bock recommend antiseptic washes for the external genitalia, with vaginal and intra-uterine injections of sublimate while the eschar is being cast off. Bock injects into the uterus tincture of iodine, perchloride of iron, or silver nitrate. It will thus be seen that the advocates of this method themselves largely employ antisepsis. As to the previous dilatation, Polaillon recognizes the fact that in certain cases it is necessary to introduce a laminaria tent, or to perform a slight dilatation with a uterine dilator. Grandmaison and Bock have also been compelled to dilate. Several of the followers of this method of treatment have testified to the severe pain which has been produced by the caustic agent. Reynier noticed that injections of morphine failed to relieve these sufferings. In ten operations Dr. Jacob has, with but one exception, noted very severe pains attendant upon cauterization. As far as rapidity of cure is concerned, the statements that the patients who have undergone cauterization are discharged in a few days cured are gravely erroneous. Bock, the Belgian defender of the system, says: "The time necessary for a cure will be from three weeks to three months." Jacobs, Polaillon and Batuaud report cases of violent hemorrhage following the separation of the eschar, thus confuting the claim of the adherents of cauterization as to the entire absence of bleeding. The efficacy of cauterization has not been demonstrated by the reports which have been published. In fifteen operations Deletrez reports but three cures, while Jacobs had ten relapses in ten cases. Neither is the method of treatment entirely free from unfortunate complications. In one hundred observations Dumontpallier reports four peri-uterine complications (two cases of pelvic peritonitis and two abscesses of the broad ligament). Following the application of caustics to the uterus, the state of the menstruation has been in several instances altered. Dysmenorrhœa and irregular menstruation, with increase of flow, have been noted by different operators.

CASE OF BILATERAL PNEUMOTHORAX.

Otto Lasius reports the case of a woman, twenty-seven years of age, with healthy husband, parents, brothers, and sisters. For a year and a half her capacity for work had diminished; she was no longer able to walk as rapidly and continuously as formerly, soon became tired, and was short of breath on slight exertion. Cough was at first slight, without expectoration, but subsequently became obstinate and accompanied by expectoration. In August, 1887, consolidation of the right apex, with beginning softening, was detected. The disease steadily progressed and a cavity developed. On January 10, 1888, the condition became suddenly worse; intense dyspnœa with a sense of constriction of the chest developed. Over the right anterior portion of the thorax, from the clavicle downward, a loud metallic percussion-note was present, which below became clearer. Over this area were heard loud metallic breathing with metallic tinkling. The same condition existed behind and above, while below there was pulmonary resonance and vesicular breathing. Nothing abnormal was detected in the left lung. On January 11th, the patient had a miscarriage of a fœtus, of six or seven months, which died in four hours. No tuberculosis was discovered at the autopsy. The patient was delirious during the following night. On January 13th, cyanosis became grave; orthopnœa set in; the respirations became 50; the pulse 120. January 14th, on the left side was developed a loud, metallic, tympanitic percussion-note, with complete absence of vesicular breathing; but anteriorly, on the side, and posteriorly, a higher-pitched sound was perceptible. In the second intercostal space, on the right side, a peculiar sensation was communicated to the finger; it was as though, directly under the skin, a viscid fluid mixed with air escaped, with a splashing sound, from a small opening. Death took place on January 20. At the autopsy bilateral pneumothorax was demonstrated.

The peculiar symptom noticed in the second intercostal space on the right side was due to the fact that the anterior surface of the right lung was adherent to the wall of the thorax in such a way that between it and the mediastinal pleura there was a cavity one inch long and four inches deep, which extended from the second to the fifth rib, and contained almost an ounce of fluid.—*Deutsche med. Wochenschrift*, April 9, 1891.

It is said that a Russian physician has brought a libel suit against a widower who had pasted on the tombstone of his lately deceased wife the last prescription he had given her, the day before her death.

"Of all that has been written and said as to what constitutes a gentleman, I like best that which we owe to Cardinal Newman, who says 'it is almost a definition of a gentleman to say he is one who never inflicts pain.' It matters not whether he be rich or poor, lettered or unlettered, well dressed or illy clad, he possesses most of that which goes to make up a gentleman who will not inflict pain."—Tyson, *Valedictory Address*, 1891.

"Much thought was expended nearly half a century ago by some of the ablest minds in the profession you have this day entered, in constructing a set of rules which should govern us in our relations to our patients, and especially to each other. The result was the Code of Ethics of the American Medical Association, a modern classic in literature which embodies the highest principles of conduct of men toward men. You will do well to study it closely, and to make it your guide; but you will learn from such study that the code of ethics is but an expansion of a much older and briefer code, 'Do unto others as you would that they should do unto you.' Than this there can be no safer guide, and if followed it will avoid most, if not all the misunderstandings which arise among medical men."—Tyson, *Valedictory Address*, 1891.

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SATURDAY, JULY 4, 1891.

INFECTIOUS BRIGHT'S DISEASE.

CLINICIANS have long felt that our knowledge of the etiology of acute Bright's disease is too scanty, and that a thorough review and re-investigation are necessary to bring the matter to a proper clearness. With the rapid advance in accurate methods of minute investigation it was but natural to expect a fuller knowledge of the causation of nephritis in its several forms, and in view of the late researches into the etiological factors of these diseases perhaps the time is now ripe for the expression of certain definite opinions or conclusions. The old idea—ascribing every case of acute Bright's disease to one of several causes, as, *e.g.*, to exposure, to preceding acute infectious disease, or to toxic agency—has been found too general and unsatisfactory.

So long as thirty years ago suspicion began to awaken, and BAMBERGER called attention to cases of idiopathic acute nephritis which suggested to him an infectious origin. Twenty years later LITTEN's attention was directed to the same point, and, with his better facilities, he was able to demonstrate bacterial foci in the kidneys, surrounded by patches of circumscribed inflammation, the vessels of the kidney being filled with microörganisms and the urine swarming with them. These are not to be considered as isolated instances of what Litten would call kidney-mycosis; the physician is constantly brought face to face with cases of this kind, cases which are not preceded by infectious disease, nor due to intoxication of any kind, and which arise independently of exposure. There are often violent and typical cases of acute nephritis, and these are they that, from the etiological point of view, puzzle us most. Here it is that investigation is needed.

As regards the nephritis following infectious disease it seems sufficiently proved by the investigations of Weigert, Gaffky, Cornil, Babes, Oertel and others, as well as by clinical observation, that the microörganisms, or the products of their activity, play an important *rôle* in the production of acute Bright's disease after pneumonia, erysipelas, typhoid, scarlet and several other infectious fevers. But it is to the other class of cases—those independent of infectious fevers—that we wish to direct attention. In this connection the careful studies of MANNABERG, at Nothnagel's clinic (*Zeitsch. f. klin. Med.*, xviii. 3 and 4), are of great interest. Whether or not we wish to go so far as he does, and ascribe to a particular streptococcus a definite etiological agency, it must be admitted that the bacteriological studies so closely coincide with well-observed clinical facts that great weight must be given to the theory of the existence of a form of mycotic nephritis. According to Mannaberg, his streptococcus possesses peculiar culture-properties, is constant in the urine and kidneys of certain cases clinically similar, disappears from the urine at the subsidence of the disease, and, when injected in pure culture into rabbits or dogs, gives rise to violent nephritis with occasional endocarditis—in other words, a blood-poisoning, with special involvement of the kidneys. These investigations are of interest in pointing out a way of study of the greatest promise. They must, of course, be repeated and confirmed by others before we can place complete confidence in them. As year by year our knowledge widens and the science of pathology is better developed, the long array of so-called functional diseases is lessened. At the same time we may expect such general agencies as cold to play a less prominent part in our conceptions of etiology. When of 105 cases of "idiopathic" acute Bright's disease, 64 present no history of cold or exposure, is it not necessary to assume other causal factors than those to which we have been accustomed? And what is more probable than infection? There are in these cases rapid onset, moderate fever, constitutional disturbances, kidneys and

urine full of bacteria—in short, a picture of disease in the highest degree suggestive of microörganismal infection. Added to the teaching of the study of individual cases and of bacteriological research, there is also the lesson of distinct epidemicity, as first observed by MIRCOLI and later by others. We therefore have the strongest ground for the theory that a definite form of infectious Bright's disease may yet be classed in our nosology.

RESUSCITATION BY OXYGEN.

LIEUT.-COL. HENRY ELSDALE'S experience with oxygen as a resuscitating agent, related in the May number of the *Nineteenth Century*, is evidently considered by him (and by the editor of the magazine), as something wholly new. While far from being a novel application of oxygen, the case appears to be unique in the extraordinary pressure employed. A man who had been attempting to empty the coal-gas from a balloon was found lying insensible, "having been breathing an atmosphere of coal gas for an unknown time." "No action of the heart could be felt," there was "no perceptible breathing," and to all appearances the man was dead. Pure oxygen being at hand, under a pressure of 1000 lbs. to the square inch, a tube connected with the reservoir was inserted into the man's mouth, and the gas turned on "as delicately as possible." Immediately the body began to exhibit writhings and convulsions, and in about ten minutes the man arose, well.

That wonderful physician who, a century ago, honored the chair of chemistry at Oxford, THOMAS BEDDOES, the worthy friend and co-laborer of Joseph Priestley, Erasmus Darwin, James Watt and Humphry Davy, demonstrated, among other things too little remembered by the profession, that kittens and rabbits that had inhaled oxygen for a certain time were more resistant to drowning, freezing or suffocating with irrespirable gases, than similar animals not saturated with oxygen.

Since the time of Beddoes, numerous observations proving the usefulness of oxygen in resuscitating the drowned or those poisoned with narcotic drugs or asphyxiating gases have accumulated. In J. SOLIS-COHEN'S treatise *On Inhalation*, we read that previously to 1847 it had been proposed by JACKSON and RICHARDSON that "wherever ether was administered oxygen should be kept in readiness to be inhaled in case of the occurrence of formidable symptoms, and that MR. HOOPER, acting on the suggestion, has supplied his inhaler with the means of furnishing oxygen at pleasure." DUCROY "proposed to make every patient awakening from chloroform-narcosis inhale oxygen, in order to rid him of headache and other inconveniences following the administration of that anæsthetic," and a very remarkable instance of recovery from chloroform-narcosis by the use of oxygen, which occurred at the New York Medical College, was published by ABRAHAMS in 1853.

Notwithstanding all this, and despite the fact that modern commercial enterprise has made it perfectly feasible always and everywhere to have the agent at command, there are many hospitals in which oxygen is not ready for instant use in emergencies, and it has not yet been recognized as an indispensable part of the outfit of life-saving stations. We believe that, not only in every clinic or private house where ether or chloroform is to be given should oxygen be under pressure, be instantly available, but that in hotels where persons are liable to be poisoned with coal-gas, and even in police-stations where persons poisoned by opium are likely to be taken, it should always be possible to find a reservoir of the gas. At seaside resorts, too, it should be part of the rescuing paraphernalia kept at the beach. A single life saved, and there would be many, would more than compensate for the cost. The pressure appears to have been a factor in Elsdale's case, and in any case the administration of oxygen should be accompanied with slow and regular movements of artificial respiration. B. W. RICHARDSON has shown that in artificial respiration the emptying of the lungs is ordinarily as important as the filling of them; and in his simple device of a double hand-bellows for that purpose, artificial expiration by suction plays an equal part with artificial inspiration by pressure.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.

MODERN medical research has devoted considerable attention to the study of the etiology of disease. In the department of bacteriology discovery upon discovery, indicative of the causal relation between microörganisms and disease, has been made and verified. In the enthusiasm and excessive zeal which attend the promulgation of a new and promising doctrine, the indifferent student is apt to ignore important accessory conditions in a desire to reach a preconceived ideal.

At this day no unprejudiced mind will attempt to

controvert the validity of the germ-theory of disease; but we have not done in accepting the principle which the theory implies. Something more than a germ is requisite for the production of disease—not that the germ is a mere concomitant, but that, while perhaps the most important, it is but one of a number of elements, the association of which is the essential factor in the determination of a definite result; the soil must be fertile and the conditions propitious for growth and development. How else explain the immunity of some and the infection of others exposed to like influences under conditions apparently similar? Though we may never be able to explain the mode of action, it is well to recognize this association of etiological elements; while not detracting from the importance of the part played by microörganisms in the production of disease, we must not ignore or underrate the significance of other factors.

In a study of one hundred cases of uncomplicated croupous pneumonia, Brunner (*Deutsch. Archiv für klin Medicin*, Hefte 1 and 2, 1891) was able to determine that the disease is more common in males than in females; that most cases occur in the third and fourth decades of life; that those who lead active lives in the open air are predisposed; that the right lung is more commonly involved than the left; that the onset usually takes place in the morning with a chill; and that the disease is most prevalent in winter and in spring. Careful comparative observations upon the mean temperature, the mean humidity of the atmosphere, relative and absolute, the mean barometric pressure, as well as upon other meteorological conditions, in conjunction with the number of cases of pneumonia observed at different periods, revealed the fact that most cases occurred when the temperature was low, the absolute humidity slight, the relative humidity great, and the barometric pressure very high or very low. It appeared that those meteorological conditions that increased the physiological activity of the lungs favored the development of pneumonia.

The brief period of incubation which characterizes pneumonia may be explained by the almost constant presence of pneumonia-cocci in the air-passages, suitable extrinsic and intrinsic conditions conferring virulent properties upon a hitherto innocuous agent.

From many considerations it therefore appears that merely waging warfare against bacteria will not eradicate disease. The physical difficulties to be overcome alone render such a mode of treatment impracticable. A rational prophylaxis will have for its object the avoidance, as far as possible, of exposure to infection to deleterious influences of all kinds.

THE FRENCH BIRTH-RATE AND DEPOPULATION.

The Diagnosis.—The French census of 1886, the last that has been taken, showed an increase of 564,955, or 0.3 per cent., on the returns of 1881. In Germany the rate of annual increase is 0.7 per cent.; in Belgium, 0.9; in Spain and Italy, 0.6. Moreover, in France the birth-rate is diminishing, so that it will not be long before the death-rate will exceed the birth-rate. In 1856 the childless families constituted 17.3 per cent. of all families; in 1886, 20 per cent. The unmarried adults in 1856 composed 10.4; in 1886, 14.4 per cent. Patriotic Frenchmen—statesmen and philosophers—know what these figures mean, just as a physician knows the meaning of decreasing nutritional power in his patient.

The Treatment.—The forms of treatment proposed are many; all depend upon the special etiology ascribed to the disease by the friends of the patient. Sexual immorality is by some thought to lie at the bottom of the mischief; by others the blame is laid upon the law of inheritance; by still others, to the use of tobacco, etc. Monod, Director of the Public Health, says that proper and feasible sanitation would certainly save 130,000 lives annually. Brouardel holds the State responsible for 14,000 lives annually sacrificed because vaccination has not been made compulsory. All, however, are agreed that the State shall be called in as physician-in-charge. Taxation of bachelors, rewards to fathers of large families, and many like proposals do not seem to reach the root of the matter. With a sublime indifference to the ethical aspect of the question — nay, even with most noteworthy encouragement of sexual immorality, the French Academy has offered its services as consultant, and at its last meeting unanimously, *and with applause*, passed the following resolution:

"That in each department there shall be established at least one asylum for the care of pregnant women during the last months of gestation; that if she wishes it each woman shall be so cared for that absolute secrecy shall be preserved as regards her entrance, stay and delivery in the establishment and as to her departure from it; that all adminis-

trative inquiry as to the place of residence and identity of the patient shall be interdicted; and, finally, that financial aid shall be given to such women as from insufficient means are unable to bring up their children."

In encouraging illegitimacy, the Academy evidently accepts the Jesuit maxim that the end justifies the means, and is also of the opinion that quantity is of far more value than quality. To an outsider it all appears more like stimulation than nutrition, and we hesitate about giving a definite prognosis.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of June 3, 1891.

THE PRESIDENT, DR. L. C. GRAY, IN THE CHAIR.

DR. M. A. STARR read a paper on "The Cerebral Atrophies of Childhood, with Special Reference to Surgical Treatment." He devoted himself to a particular class of cases—viz., the cerebral diseases of infancy and childhood. Certain cerebral diseases of infancy give rise to definite symptoms, constituting three types of clinical cases: 1. Cases of hemiplegia, with or without athetosis; 2. Cases of mental defects of various grades; 3. Cases of sensory defects of various kinds. Since epileptiform seizures, *petit mal* or *grand mal*, are frequently encountered in any of these forms, and might be the symptom in regard to which advice was sought, the discussion must also include the surgical treatment of non-traumatic organic epilepsy in children. In cases of the first class the symptoms are unilateral paralysis, suddenly developed, after a series of convulsions, attended with elevation of temperature and other febrile symptoms, followed by loss of consciousness of varying duration; after the subsidence of the active symptoms of onset gradual improvement in the paralysis follows. Ultimately a stationary condition is reached, in which voluntary and automatic movements of the face are scarcely affected; speech, if lost, is usually regained; the arm is quite seriously paralyzed, the fingers being stiff and awkward, and sometimes in constant, slow, involuntary motion; the leg is held rather rigidly, so that the child limps in walking, and sometimes has club-foot. In all cases the paralyzed limbs are found to be affected in growth and development, being smaller, colder, stiffer and weaker than their fellows; the reflexes are exaggerated, but the electrical reactions are not quantitatively changed; sensation is normal. This condition remains through life as a permanent defect. In over one-half of the cases of this kind epileptic attacks are of frequent occurrence. The cases which date from birth must be divided into those in which there was evidence of traumatism during labor, and those in which there was nothing about the delivery sufficiently unnatural to awaken suspicion of trauma. In the former, cerebral hemorrhage (usually meningeal) is the cause of the symptoms. In the latter it is probable that an intrauterine encephalitis or some unknown cause has prevented the development of the fœtal brain. The degree of spontaneous recovery in any case could be pretty well determined by an examination at the end of the second year; complete recovery has never occurred. In organic epilepsy the fits are more likely to be frequent and severe than in idiopathic epilepsy. These attacks do not destroy life, but of course render it a burden, so that almost any means of relief is welcomed. Cases of the second class present mental defects rather than physical symptoms—defects which cannot be eradicated. Cases of the third class present no motor or mental deficiencies; they are capable of training, but display defects of sensory perception, indicative of gross cerebral disease. Many cases of deaf-mutism belong to this class, as do some cases of hemianopsia. Dr. Starr related the history of a little girl, twelve years old, who had suffered all her life from frequent attacks of *petit mal* and occasional attacks of *grand mal*. She had never been able to see objects approaching her from the left side. From the mother it was learned that the child had been delivered with much difficulty; that the labor had been protracted; that the head was misshapen and had a large caput succedaneum posteriorly. Perceptible flattening of the skull over the right occipital region could be detected. The visual fields were contracted. It is reasonable to suppose that there existed defective development of the right occipital lobe of the brain, involving the cortex and the subcortical tract. Wilbran has shown that a purely cortical lesion produces symmetrical defects in the visual field, while subcortical lesions produce asymmetrical defects. In the case reported the pupils responded to light thrown upon the blind field of the retina—hence the lesion was not in the optic tract. There was no hemianæsthesia or hemiplegia—consequently the lesion was not in the thalamus or near the internal capsule. The patient was brought for treatment for epilepsy, and it was important to decide as to the possible benefit of surgical interference. A solution of the problem of operative treatment must be based upon two considerations: (1) The pathology of the cases, and (2) upon the results of experience in cases in which such operations had been done. Differences in clinical types depended upon differences in situation of the lesion. The various processes of disease had as a fairly uniform result a condition of atrophy with sclerosis of the brain. In cases of the first type the sclerotic atrophy involved the motor area, the central convolutions and their immediate vicinity, including the tract arising from them, and usually the basal ganglia as well. In cases of the second type the sclerotic atrophy involved the anterior portion of the brain, and sometimes the entire hemisphere, to a greater or less extent. In cases of the third type the sclerotic atrophy involved the posterior and lateral parts of the hemispheres. The hypothesis that the lesion depended upon interference with the blood-supply of the part (since in some cases the atrophy is limited to the region supplied with blood by one arterial trunk) is weakened by the fact that at autopsies it is rare to find vascular lesions in the brains of infants. The pathogenesis of these defects is as yet quite obscure. From the records of operations performed in six cases of the first clinical type, it is evident that this method of treatment offered no relief. In the second type the pathology contra-

indicated operation. As to the third type, with sensory defects, there were no facts of surgical import to present; but, judging from the pathological resemblance between it and the first two classes, there was no reason to expect any different result from surgical treatment. The conclusions to be drawn are: 1. That in infancy and childhood mental defects, hemiplegia and sensory defects of years' duration are usually due to irremediable atrophy of the brain; 2. That in such cases surgical treatment cannot afford any relief, for there is probably no increase of intra-cranial pressure to be relieved, while the pathological state is one which is not susceptible of treatment; 3. That the sudden onset of motor, sensory or psychic symptoms in childhood, while awakening a suspicion of cerebral hæmorrhage, is not a positive indication, and cannot be made the basis for an operation, unless many other facts make the diagnosis clear; 4. That the occurrence of epilepsy in such cases might be made the basis of an operation, for while the epileptic attacks are of organic origin and will persist, their frequency may be much diminished. In such cases the opening in the skull should not be filled with bone. The existence of a movable connective-tissue valve of scalp covering the opening in the skull with varying tension, may have something to do with the cessation of the fits. Great caution is to observed in recommending surgical interference in the class of cases which belongs to cerebral atrophies.

Dr. B. Sachs thought that there was hope for the cases described if they could be operated upon at the time of the initial lesion, before degenerative changes had taken place. It is worse than useless to operate in cases of sclerosis or porencephalus. Secondary degeneration follows in many diseases of the brain, but not in all cases. Much good is accomplished by the puncture of old hemorrhagic cysts. The frequency of epileptic attacks has been very much diminished by this procedure. In the radical treatment of cerebral atrophies, no good can result unless the entire diseased area is removed. The patient might be left with a paralysis, but with a cure of the epilepsy. Which of the two were the greater evil would have to be determined by those most interested. When a sclerotic condition was not thought to exist, and it was supposed that the initial lesion could be attacked, an operation might be done; but it must be borne in mind that children do not bear surgical operations upon the brain as well as do adults.

CORRESPONDENCE.

PATENT MEDICINES; QUACKERY; INCOMPETENCE AND FRAUD IN THE DRUG TRADE.

To the Editor of The Medical News,

Sir: From the above heading you will instinctively think of the wordy denunciation, and the language of impotent abuse, so frequently hurled at quacks and quackery. You will also doubtless call to mind the addresses and resolutions of medical society anniversaries, in which the quack, metaphorically speaking, is cornered, and so to speak, punched in the ribs, and otherwise maimed and maltreated. But this so-called "doing-up" of the quack has not injured him very seriously. On the contrary, it has served to increase his strength and to prolong his days upon the earth. The object of all such efforts has looked in the right direction, and it is not my purpose to criticise it. But these agencies have had no very decided effect, and in the nature of the case they are not likely to influence or mould public opinion to any great extent.

In recent years attention has been turned to law-making, hoping thereby to restrict and control medical and pharmaceutical education and practice in such a way that the evils complained of may be finally abolished. This plan looks to a thorough purging of the body professional by means of legislative enactments, the application of which the executive departments, or more specifically the Governors of the respective States, are to be entrusted with. This method has some advantages. It is a very simple and summary manner of obtaining some sort of remedy for the evil. The average legislator and Governor are fond of making laws and increasing their political prerogatives, and will help our medical reformers along this line of action. These gentlemen, however, either forget or ignore the fact that the American medical profession many years ago tried this plan of dealing with the evils of quackery and incompetence in our ranks, and failed. And they forget that under a republican form of government all legislation directed against any popular error or crime whatever, will in the end be only so much *brutum fulmen* unless sustained by public opinion, and that popular evils will be corrected and popular crimes punished, law or no law, if public opinion decrees it. Whatever legislation, then, may be secured in the future, it will wholly and ingloriously fail in its avowed purpose, unless public opinion thoroughly indorses it.

The plan which I wish to propose looks to taking the people thoroughly into our confidence and making them our allies. In a word, it is as follows: After careful chemical analysis, the publication to the world of the secrets of the composition of all popular patent medicines, and also the testing of all drugs and pharmaceutical preparations suspected of not being up to the official standard of strength and purity.

A necessary part and prerequisite of this scheme is the establishment of a suitable but not very expensively equipped chemical laboratory centrally located, supported by and under the joint management of the American Medical and the American Pharmaceutical Associations, with publication of its work. The mystery of the composition of a patent medicine is the chief reason of its great sale, and the United States patent laws guarantee that the secret shall be kept. But if the Government could be induced to repeal these laws and require the composition of every nostrum to be published on the label or wrapper of the package or bottle in which it was dispensed, the ruin of the trade would follow. If, however, the two above-mentioned associations could, by combining their resources of money and skill, discover and divulge to the world these secrets, it would not be long before public opinion would demand some action on the part of Congress restricting and regulating the evils of the patent medicine trade. Nor would the resulting benefit of such a supervising control and influence over the regular drug trade be barren

in results. In time it would bring about the assurance that drugs and pharmaceutical preparations should be of a uniform standard of purity and strength.

Anyone, physician or druggist, could then submit drugs or preparations to the examination of this competent and fair tribunal, and errors or frauds would there be corrected, discovered and exposed. And particularly would the country physician, remote from the great manufacturing and importing centres of the country, hail with delight the institution of a single censorship, which would at once insure him the certainty of pure drugs and result in a greatly needed improvement in the drug trade.

Geo. Cowan.

Danville, Ky., June 18, 1891.

REVIEWS.

A Text-book of Practical Therapeutics, with especial reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to St. Agnes's Hospital and to the Medical Dispensary of the Children's Hospital; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London, etc.; Secretary of the Convention for the Revision of the Pharmacopœia of 1890. Second edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1891.

If the sale of a large edition of a work on practical therapeutics, and its adoption as a text-book by a number of medical colleges, within the short space of six months is any indication of its merits and of its value as a practical guide in the treatment of disease, Prof. Hare is to be congratulated upon having given the profession such a work. The appearance of new works and successive editions of old ones is necessitated by the rapid advance in our knowledge of the physiological action of drugs and their application for the cure of disease. Chemists are continually producing new compounds whose physiological actions are immediately investigated; clinicians eagerly scan the conclusions and seek out the indications for their use. While the results of individual observers are recorded in the periodical medical literature of the day, it becomes necessary at intervals for someone skilled in a knowledge of physiological methods, and possessing at the same time a general therapeutic training, to gather the results of different investigators, to determine their comparative value and present them in a compact form, that they may be readily accessible. The well-known investigations upon the physiological action of drugs, and the clinical experience of Prof. Hare, abundantly qualify him for such a task.

The present work is divided into four parts, viz.: I. General Therapeutic Considerations. II. Drugs. III. Remedial Measures other than drugs. Foods for the Sick. IV. Diseases. Tables of doses and remedies. Tables of relative weights and measures in the metric and apothecaries' systems. Index of drugs and remedial measures. Index of diseases and remedies.

In Part I. the author briefly and concisely discusses, among other topics, the modes of administering drugs, their dosage, the idiosyncrasies of patients, the incompatibilities of drugs, the indications and contra-indications for their use, etc. He interjects a large number of valuable and practical suggestions which must ever be kept in mind if the student or practitioner expects to obtain the best possible effects after their administration. It is a neglect of these primary facts which is the cause of so much disappointment, and which leads the practitioner to doubt the efficacy of remedies.

Part II., embracing nearly three hundred pages, is taken up with a consideration of the properties of drugs, their physiological action and therapeutical uses.

The author makes no attempt at a classification of drugs, but arranges them in alphabetical order, according to their English names. While it is well known that in the present state of pharmacology an exact and scientific classification is almost impossible, nevertheless a grouping together of those drugs which resemble each other in their effects on the system, both in health and disease, is not only possible but desirable. It would simplify the study of this subject and thus lighten the task of the student.

In the published reports of the physiological action of drugs by special investigators there is often much that may be of interest scientifically, but practically is of little value. Dr. Hare, who has had a large experience in investigating the action of drugs, has exercised good judgment in selecting and recording here only those effects upon the different physiological mechanisms which are essential to the therapeutist wishing to administer remedies intelligently. In this respect the work before us is worthy of commendation, because a thorough acquaintance with these facts, and the administration of drugs in accordance with them, is the only way in which a rational system of therapeutics can be established.

In Part III., in addition to a consideration of the therapeutic uses of heat, cold, antisepsis, disinfection, venesection, counter-irritation, etc., the author has added to the second edition a short account of the methods of employing the rest-cure—devised by Dr. S. Weir Mitchell, and which has been so successful in the treatment of a great variety of nervous diseases. The treatment by the method of suspension also receives a brief consideration. To those familiar with the difficulties of alimentation in various forms of disease, the introduction in this work of formulæ for the peptonization of milk, beef, gruel, and the diet lists of the Children's and University hospitals, will be considered judicious, and, if faithfully carried out, will not only enable the physician to combat successfully many pathological conditions of the alimentary canal, but also to retard the progress of many general wasting diseases.

In Part IV. the author has devoted nearly two hundred and fifty pages to the treatment of a large number of the more familiar diseases, and brought together under each disease the various drugs and remedial measures which in his experience and in the experience of others have been found most successful. Symptoms and pathology in these sections have been omitted, except in so far as they might be necessary to a correct application of the drugs. Numerous prescriptions will be found in this part, which, if carefully considered, will

at least teach young practitioners the value of combining two or more drugs for the purpose of obtaining the best possible results.

In the preparation of the first edition of this work errors of statement and fact unavoidably crept in, some of which were pointed out in the various published reviews. These, so far as possible, have been eliminated and the entire text has been subjected to careful revision. Upon any subject about which there is so much diversity of opinion as the action of drugs and the treatment of disease, it is very difficult for a writer to make statements which will not be antagonized and criticised by someone, and the only course to pursue is to think and write according to the knowledge and experience which one possesses. This we believe the author of this work has conscientiously done. Successive editions will no doubt be called for, which will contain all the true acquisitions to modern therapeutics.

A Practical Treatise on Diseases of the Skin. By Henry G. Piffard, M.D., Clinical Professor of Dermatology, University of the City of New York, etc.; assisted by Robert M. Fuller, M.D. With fifty full-page original plates and thirty-three illustrations in the text. New York: D. Appleton & Co., 1891.

The key to the author's mind in the preparation of this work may be found in the preface, where it is stated that he has endeavored to present the subject "in the most practical manner and with the fewest possible words." There is an absence of theoretical and controversial discussion, and to a considerable extent even of pathological histology. The statements throughout are brief and concise, and in some instances at a sacrifice of the subject-matter. The chapters are for the most part short, many of them too short, we think—some of the more important diseases, as for example, comedo and tinea sycosis, receiving barely a dozen lines. Other well-known diseases, such as ecthyma and pityriasis rosea are altogether omitted from both description and representation. From these observations it will be noted that the work cannot be accepted as a systematic and complete treatise on diseases of the skin. At the same time, while we would have been pleased with a fuller and more complete exposition of the subject, we highly appreciate the work as it stands, and especially the valuable personal experience of the author, which comes out strongly on every page. A few practical points may be referred to. In the treatment of eczema of the scrotum the best three methods are scarification, sometimes followed by surprising relief; the galvanic current; and the application of liquor potassæ. In eczema of the anus the fine point of the Paquelin cautery at white heat is well spoken of; and in acute eczema of the leg and in eczema of the vulva, solution of peroxide of hydrogen is greatly esteemed. As a substitute for tar the following formula is recommended: Salicylic acid, grains x to xx; oil of lavender, ʒiij; oil of citronella, ʒj; oil of eucalyptus, ʒij; castor oil, ʒij. This is especially useful in eczema of the scalp, where tar would be indicated. In general the value of internal treatment is insisted on, and excellent advice is given concerning the use of that potent but dangerous drug arsenic, than which no remedy is more abused in the treatment of skin diseases. The view obtains even at this date, and this too among the best class of general practitioners, that arsenic is generally useful over the whole range of cutaneous diseases: as a result much positive damage to the skin and whole organization is not infrequently wrought. Probably in the majority of cases where used it proves more injurious than beneficial both to the skin and to the tissues generally.

We note that lichen ruber and lichen planus are regarded as distinct diseases, the distinguishing marks of lichen ruber being that the lesions are acuminate and not flattened, lack the central depression, and rarely undergo spontaneous resolution.

Under pityriasis rubra two diseases are described separately, viz., pityriasis rubra (Devergie), and pityriasis rubra (Hebra).

A long chapter is devoted to the new disease called psorospermosis, the author arriving at the conclusion, as concerns the pathology of the disease, that the so-called molluscous bodies, or psorosperms (so far as molluscum contagiosum is concerned), are not animal parasites, but are simply rete cells undergoing a species of corneous degeneration.

The plates consist of photographs taken by the aid of artificial light, which Dr. Piffard regards as preferable for this purpose to ordinary light. The pictures vary in size, some being almost as large as life; they also vary in degrees of perfection, many being remarkably good, while others fail altogether to portray the disease. The best, in our opinion, are eczema of the sole; eczema of the knees; psoriasis resembling eczema; seborrhœa kerativa; icthyosis; and alopecia areata.

We heartily commend the atlas to the profession, feeling that it will prove a valuable addition to the library. The author's long-established reputation is alone sufficient to recommend it to all interested in dermatology. It is a handsome royal quarto volume of one hundred and fifty-six pages, with large clear type, and is printed on heavy, highly calendered paper.

Practical Pathology and Morbid Histology. By Heneage Gibbes, M.D. Philadelphia: Lea Brothers & Co., 1891.

Dr. Gibbes's established reputation as a master of the technique of microscopy would lead us to anticipate a work of great value. In this we are not disappointed. The chapters devoted to this subject are models of completeness, condensed in such a manner as to render them of the greatest possible value to the laboratory worker. The author's methods of hardening, section-cutting and staining are given in detail, and are accompanied by valuable formulæ for reagents, etc. Celloidin and paraffin infiltration are not mentioned, both of which, in other hands, have proved valuable methods. The method of differential staining of the central nervous system (Weigert's) is not given. Dr. Gibbes very wisely insists that clinical histories be sent to the laboratory with the material to be examined. Many clinicians seem to think that the more their specimens are enshrouded in mystery the more interest the laboratory worker will find in them. The reverse, of course, is true. The chapters on Practical Bacteriology would have been vastly improved by descriptions of tube-plates, bottle-plates, and methods for anaerobic culture.

The chapters on Morbid Histology give wide scope to the author's marvellous skill in photo-micrography, and some beautiful reproductions are made by the photo-electrotype process. We cannot, however, praise the process work, as detail, sharpness of outline and penetration are wanting in nearly all cases.

In theory, Dr. Gibbes belongs to that class of pathologists who ignore the generally accepted microbic origin of disease, and, as a result, his ideas of inflammation, suppuration, tuberculosis and allied conditions are at variance with those of the majority of the profession. The deposit of lime salts in inflammatory and similar processes is discussed as "Calcareous Degeneration." Amyloid infiltration is also considered a degeneration. The definition of neoplasms is faulty, as all its predecessors have been. In fact, it seems to us that, had Dr. Gibbes devoted the space of this portion of the book to a more extended discussion of technique, embracing the examination of the blood, etc., he would have enhanced the value of his work.

The chapter on Photography is replete with excellent formulæ and directions. The necessary dark-room appliances, as well as the room itself, have no mention. The photographs of bacteria are superb, and the remarks upon lenses the most appropriate we have seen.

Taken as a whole, the volume is one of the best upon technique that we possess, and no laboratory should be without a copy.

Materia Medica and Therapeutics, with especial reference to the Clinical Application of Drugs. By John V. Shoemaker, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association, of the Pennsylvania and Minnesota State Medical Societies, the American Academy of Medicine, the British Medical Association, Fellow of the Medical Society of London, etc.

Vol. II. of a Treatise on Materia Medica, Pharmacology and Therapeutics: being an independent volume upon Drugs. Philadelphia and London: F. A. Davis, 1891.

The first volume of this work on materia medica and therapeutics was published several years ago and was the result of the conjoint labors of Prof. Shoemaker and Dr. John M. Aulde. This second volume, which has just made its appearance, has been the work of Prof. Shoemaker alone and is regarded by him as an independent work devoted to the consideration of drugs, their pharmaceutical preparations, their physiological actions and therapeutical uses.

The author has devoted over 600 pages to the consideration of an enormous number of drugs, many of which, however, have long since ceased to play any part in the modern treatment of disease. According to the announcement each drug is considered in alphabetical order "for convenience of reference for either physician, dentist, or pharmacist, when immediate information is wanted concerning the action, composition, dose, or antidote for any officinal preparation or new remedy."

The description of the physiological effects of drugs is complete and accurate and represents the existing state of pharmacological knowledge. In addition to the ordinary and well-known officinal drugs, Dr. Shoemaker has collected the latest and most reliable information as to the action and uses of all the noteworthy new remedies such as tuberculin (Koch's lymph), spermine (Brown-Séquard), exalgine, bromoform, thiol, pyoktanin and many others.

The therapeutical uses of this long list of drugs is quite extensive, the author apparently having but little sympathy with modern therapeutical nihilism; a great variety of prescriptions and practical formulæ are found everywhere throughout the volume, which are supposed to represent the latest achievements of clinical medicine.

Text-book of Ophthalmoscopy. By Edward G. Loring, M.D. Edited by Francis B. Loring. Part II. New York: D. Appleton & Co., 1891.

The first part of this work, which appeared in 1886, described the normal eye, the methods of determining refraction, the diseases of the media and the theory of the ophthalmoscope. With the exception of a remarkable indifference to the value of retinoscopy, it is a splendid presentation of the subjects enumerated. The volume before us, which has been published under the editorship of Dr. Francis B. Loring, discusses diseases of the retina, optic nerve and choroid, their varieties and complications, and, in spite of the fact that final revision on the part of its author was not possible, is a remarkable book, clear, thorough and replete with new facts and old facts presented in a new light. The disturbances of the vascular system of the eye-ground and the various types of inflammation of the retina occupy more than one-half of the volume. Space does not permit us to take up in detail the quite original method in which this particular field of ophthalmoscopy has been occupied, but we feel that the title of "text-book" does not give an adequate idea of the subject-matter. It really is composed of a series of monographs in which, with singular skill, Dr. Loring has carefully digested the literature of the subject and garnished it with his own admirable observations. Diseases of the optic nerve follow, not quite so thoroughly treated, the presentation of the matter included under the title "Glaucomatous Excavation" being somewhat disappointing. Affections of the choroid, so far as the subject goes, is capital reading, but evidently far from complete. Except in general reference to what the book contains we have not attempted to give an analysis of its subject-matter, which we think the editor was most wise to present without addition and without correction. Practising ophthalmologists might often find statements throughout these pages with which they cannot agree—statements, however, that one would expect from a strong man like the late Dr. Loring, whose vast experience, accurate observation and positive opinions are necessarily presented with the vigorous directness of one possessed of the courage of his convictions. It seems to us that the value of this text-book is that it not only furnishes what is best in the portions of ophthalmology to which it relates, but also what was best in the lamented author's own observation—observation that gave him his high rank among scientific physicians.

Historical Sketch of the University of Maryland. By E. F. Cordell, M.D. Baltimore: Isaac Friedenwald, 1891.

One of the most interesting portions of medical history in the United States is connected with the foundation of its medical schools and with the lives of their professors. Dr. Cordell, in a peculiarly happy style, has written about those men who were prominent half a century ago in the medical history of Maryland, and who were naturally connected with the Medical Department of its University. In addition to the ordinary biographies of the Faculty, the author has woven into his narrative enough of the private life of each physician to give one an interesting insight into the ways in which things were done in Maryland fifty years ago by those who were recognized as being in the forefront of social life.

At the end of the book there is a complete list of the graduates of the institution, which is completed by an appendix containing a list of all the provosts, deans, and professors. The engravings and other likenesses which are scattered through the work are unusually good, and the author and publisher are to be congratulated upon the pleasant appearance of their product.

NEWS ITEMS.

Resignation of Dr. James B. Walker.—At a stated meeting of the Faculty of the Woman's Medical College of Pennsylvania, held May 16, 1891, the following action was taken in connection with the resignation of the chair of Practice of Medicine by Dr. James B. Walker:

"The Faculty has received with sincere regret the announcement of the resignation by Dr. James B. Walker of the chair of the Practice of Medicine in this College.

"Dr. Walker held this chair during a period of twelve years, and continuously merited and received the highest appreciation of his colleagues in the Faculty, of the associate teachers, and of the students.

"In all the relations incident to the position he occupied he demonstrated his urbanity, integrity and unusual ability.

"He enthusiastically and successfully fulfilled not only the duties directly pertaining to his connection with the College, but he was also very active and successful as a clinical lecturer at the Woman's Hospital.

"As one of the physicians to the Philadelphia Hospital he greatly enlarged his usefulness to our students by gratuitously extending to them invaluable bedside instruction in that hospital.

"He contributed to the harmonious working of the Faculty and rendered material assistance in advancing the prosperity of the College.

"The exactions of his extensive private practice have influenced Dr. Walker to present his resignation. The Faculty extends to him its best wishes for his continued prosperity and happiness."

To Prevent the Importation of Disease.—Surgeon-General Wyman, of the Marine-Hospital Service, has suggested, as a precaution against the importation of smallpox and other diseases by means of the baggage of immigrants, that the States for which the immigrants are destined be furnished with a list of persons who come in vessels which have been or are infected or which come from ports at which contagious diseases prevail.

The Second Congress for the Study of Tuberculosis will be held at Paris from July 27th to August 2d. The following subjects will be discussed: (1) The Identity of Tuberculosis in Man and Tuberculosis in Cattle, Fowl and other Animals; (2) Association of Morbid Conditions Dependent upon Bacteria with Tuberculosis; (3) The Treatment of Tuberculosis in Hospitals; (4) The Prophylaxis of Tuberculosis in Man and in Animals; (5) Means of Destroying the Tubercle Bacillus without Injury to the Organism, with Reference to the Prophylaxis and Treatment of Tuberculosis in Man and Animals.

Dr. Daniel G. Brinton will represent the American Philosophical Society at the Congrès International d'Anthropologie et d'Archéologie Préhistorique, to be held at Moscow.

Dr. Gabriel Anton, of Vienna, has been elected Professor Extraordinary of Neurology and Psychiatry at the University of Innsbruck.

Royal Academy of Science of Vienna.—Meynert has been elected a corresponding member and Exner an ordinary member of the Royal Academy of Science of Vienna.

The Fourteenth Italian Medical Congress will be held at Siena, August 16, 17 and 18, 1891.

State Board of Health of Kentucky.—At a recent meeting of the State Board of Health of Kentucky, held at Louisville, it was

"*Resolved*, That the Secretary be instructed to place upon the list of medical colleges, the diplomas of which are to be certified to and indorsed for registration under the laws of this State, only such colleges as shall, after the session of 1891–2, exact of matriculates and graduates a minimum of requirements not lower than that required by the American Medical College Association."

The Colorado State Medical Society held its twenty-first annual convention at Denver, Col., June 16, 17 and 18, 1891. A most elaborate programme, including the presentation of a large number of scientific papers, was carried out.

The American Society of Microscopists will hold its fourteenth annual meeting at Washington, D. C., August 10–14, 1891.

Midwives in Hungary.—Professor William Tauffer, of Budapest, considers midwives largely responsible for the high mortality among lying-in women and newborn children in Hungary.

Madame Pauline Malcy has bequeathed $8000 to the Association des Médecins de la Seine, for the relief of widows and daughters of medical men who have left their families in straitened circumstances. Madame

Malcy has also bequeathed $4000 to the French Academy of Medicine, for the foundation of a prize for the best work on a subject connected with mental disease.

Convalescent Home.—An anonymous donor has presented to the county of Surrey, in England, a convalescent home for males at Seaford, Sussex. The cost of erection was $75,000; an endowment of $50,000 has been set aside. The house will accommodate fifty patients. The Duke of Cambridge is the president of the institution; the Duke of Connaught and the Duke of Teck, vice-presidents.

The Croonian Lectures of the College of Physicians of London have been postponed, owing to the illness of Dr. Burdon Sanderson, the lecturer of this year.

The Inter-continental American Medical Congress.—At the meeting of the American Medical Association, held at Washington, May 5, 1891, preliminary arrangements were made for an Inter-continental American Medical Congress.

A Committee on Nominations was instructed to nominate one member for each State and Territory, and one each from the Army, Navy and Marine-Hospital Service, to constitute a committee to effect a permanent organization of the proposed Inter-continental American Medical Congress, and to determine the time and place at which it should be held.

The committee appointed by the American Medical Association to effect a permanent organization of the Inter-continental American Medical Congress, met at Washington, May 7, 1891. Dr. Charles A. L. Reed, of Cincinnati, Ohio, was elected Chairman; Dr. J. W. Carhart, of Lampasas, Texas, Secretary; Dr. I. N. Love, of St. Louis, Mo., Treasurer.

The officers were appointed a special committee to draft a constitution, and to report at an adjourned meeting of the general committee to be held at St. Louis, Mo., Wednesday, October 14, 1891, when the time and place of meeting of the Congress will be decided, and permanent officers be elected.

Francis Peyre Porcher, M.D., LL.D.—At the recent commencement of the South Carolina University of Columbia, the honorary degree of Doctor of Laws was conferred upon Professor Francis Peyre Porcher, the distinguished pharmacologist.

Medical Society of New Jersey.—The one hundred and twenty-fifth annual meeting of the New Jersey State Medical Society was held at Long Branch, June 23d and 24th. The President, Dr. James S. Green, delivered the annual address. His subject was, "A View of Modern Surgery from the Standpoint of a General Practitioner." Dr. Edgar Holden, of Newark, read a paper on "Tuberculosis." Dr. E. J. Marsh, of Paterson, was elected President for the ensuing year and William M. Pierson, of Orange, Secretary. The next meeting will be held at Atlantic City in June, 1892.

The Vis Medicatrix is the name of a new publication, to be issued bi-monthly as the journal of the Iowa State Medical Society, and to be devoted to human and comparative medicine. Woods Hutchinson, A.M., M.D., is the editor, and L. H. Pammel, B.Agr., and S. Stewart, M.D., D.V.M., are his associates. The first number bears the date of June 1, 1891, and contains the proceedings of the Iowa State Medical Society, a number of terse editorials, a department of diseases of animals, under the charge of Dr. Stewart, and a department of plant-diseases and bacteriology, under the charge of Professor Pammel. Fifty-five pages of reading matter are presented in excellent form and typography.

Correction.—In the memorandum on "Methods of Staining Bacilli," by C. F. Gardiner, M.D., in THE MEDICAL NEWS, June 13, 1891, p. 668, the quantity of methyl-blue in the second formula given should be fifteen grains, and not, as stated, two ounces.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 23 TO JUNE 29, 1891.

SKINNER, J. O., *Assistant Surgeon.*—Upon the abandonment of Fort Davis, Texas, will proceed to Fort Clark, Texas, and there take station.

EWING, C. B., *Assistant Surgeon.*—Is granted leave of absence for one month.

CARTER, EDWARD C., *Assistant Surgeon.*—Is relieved from duty at Fort Walla Walla, Washington, and assigned to duty at Fort Canby, Washington.

By direction of the Acting Secretary of War, the leave of absence on surgeon's certificate of disability, granted JULIUS H. PATZKI, *Major and Surgeon*, in S. O. 99, May 1, 1891, from this office, is extended two months on surgeon's certificate of disability.—Par. 15, *S. O. 142, A. G. O.*, June 22, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 27, 1891.

HALL, J. H., *Surgeon.*—Detached from Naval Station, New London, and ordered to Naval Hospital, Chelsea, Mass.

ATLEE, L. W., *Passed Assistant Surgeon.*—Detached from nautical School-ship "Saratoga," and wait orders.

STEELE, J. M., *Passed Assistant Surgeon.*—Ordered to nautical School-ship "Saratoga."

LUNG, G. A., *Assistant Surgeon.*—Ordered to Naval Station, New London, Conn.

PAGE, J. E., *Assistant Surgeon.*—Detached from Naval Hospital, Mare Island, and ordered to the "Independence."

PIGOTT, M. R., *Assistant Surgeon.*—Detached from U. S. Receiving-ship "Independence," and ordered to Naval Hospital, Mare Island, Cal.

FIELD, J. G., *Assistant Surgeon.*—Detached from U. S. S. "Omaha," and granted three months' leave of absence.

BRATHWAITE, FREDERICK GRATTON, of Stamford, Conn.—Commissioned an Assistant Surgeon in the Navy, June 22, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

THE USE OF MORPHINE FOR THE RELIEF OF CERTAIN URÆMIC SYMPTOMS.[1]

BY W. H. WASHBURN, M.D.,
OF MILWAUKEE, WIS.

THE purpose of this paper is to show that there are certain uræmic symptoms, convulsions, renal asthma, and severe cephalalgia, for the relief of which morphine is specially indicated. This conclusion I shall attempt to reach by the only two lines of argument that can be pursued, that is, both by the deductive and inductive methods.

In what is to follow I do not wish it to be understood that I attribute to morphine, used under these circumstances, a curative influence; my only claim being that it relieves distressing symptoms, without adding to the dangers under which the patient already labors, and thus gives the physician an opportunity to resort to other well-known methods of treatment, namely: (1) To reduce the supply of poisonous substances in the blood by regulating the diet, by bowel disinfection, and by attention to the functions of the liver; (2) the removal of uræmic poisons by venesection, purgation, or diaphoresis; (3) their oxidation by the use of oxygen or active exercise; (4) the relief of particular symptoms or antagonizing the poisons. The subject-matter of this paper, therefore, pertains only to the fourth indication.

Headache, drowsiness, coma, dyspnœa, vomiting, diarrhœa, disturbances of sight and hearing, muscular twitchings and convulsions, are the symptoms which appear, in varying combinations, in that condition to which the term uræmia is applied. These symptoms are the result of the retention in the blood of certain excrementitious substances which the kidneys, in the course of Bright's disease, acute or chronic, have been unable to eliminate. They are an expression of the deleterious effects of these poisonous substances upon the brain and nervous system. That these symptoms are not the result of the retention in the blood of urea has long been known, although under that supposition the term uræmia was applied to them.

The symptoms being thus various and diverse, it seems reasonable to conclude, and experiment has proved, that they are not the effect of any one or two toxic substances, although it is not possible to determine positively what particular symptom is caused by a given excrementitious substance. Experiments with a view to the elucidation of these problems, though surrounded by many difficulties, have been entered upon by Bernard, Traube, Frerichs, Feltz, Ritter, Lepine, Zalesky, McMunn, and many others. It has been shown, for example, that when the amount of urea in the blood is increased a diuretic effect is produced upon the kidneys; that when urea is injected into the blood of animals in any reasonable amount it is rapidly eliminated by the kidneys, and causes no uræmic symptoms (McMunn, *Clin. Chem. Urine*, p. 38). A guinea-pig died in two hours and seventeen minutes after receiving a subcutaneous injection of ten grammes of urea; a second died in twenty-one minutes after an injection of 128 cubic centimetres of urine, containing ten grammes of urea—thus showing that, although urea in large amounts is undoubtedly poisonous, the other constituents of the urine are much more so (Dr. F. P. Henry, THE MEDICAL NEWS, vol. liv., 1889, p. 477). *Creatinin* injected into the blood of dogs caused feebleness and muscular contractions. Ligating the ureters in snakes and birds, in both of which urea is excreted as uric acid, was followed by coma (McMunn, *op. cit.*), hence the theory that coma is probably due to the presence of an acid in the blood. That the potassium salts share in the production of the phenomena of uræmia has been experimentally shown (*Medical Record*, vol. xxxv., 1889, p. 493). Bouchard has demonstrated that the coloring matters of the urine give rise to at least some of the symptoms of uræmia (*Lancet*, vol. ii., 1885, p. 161). Cuffer thought uræmic symptoms were caused by the destruction of red blood-cells. Hughlings-Jackson attributed some of these symptoms to spasm of the cerebral vessels. In addition to the substances already mentioned there are leucin, tyrosin, creatin, and other nitrogenized extractives, besides ptomaines and leucomaines, which must be regarded as adding to the sum-total of the phenomena of uræmia.

In a given case the symptoms observed will, therefore, vary as the proportions of these different toxic substances in the blood vary. In one case vomiting and diarrhœa may be the prominent symptoms;

[1] Read before the Milwaukee Medical Society, April 14, 1891.

in another headache, asthmatic attacks, or convulsions; in still another, delirium, tinnitus aurium, hemiplegia, coma. The varying effects of uræmic poisons may further be observed in a study of the condition of the pupils. In uræmic dyspnœa the pupil is usually dilated, though when the condition deepens to one of apnœa the pupil becomes contracted. Dickinson (*Treatise on Albuminuria*) reports several cases of uræmic coma occurring in the course of granular degeneration of the kidneys, unaccompanied by muscular twitchings or convulsions, in which the pupils were contracted, or in which it is noted that one pupil was contracted. Roberts (*Urinary and Renal Diseases*) reports numerous cases of uræmia from obstructive suppression of the urine, in which the pupils were strongly contracted—great restlessness, insomnia, or vomiting and diarrhœa being the most prominent symptoms. Grainger Stewart (*Lectures on Albuminuria*) reports a case of uræmia resulting from granular degeneration of the kidneys, in which the pupils were contracted while the patient was delirious, drowsy, and breathing with difficulty. During the convulsions this patient had, the pupils were widely dilated; as the convulsive movements and twitchings subsided, the pupils again contracted. During the earlier stages of chronic interstitial nephritis the pulse is full and hard, and the blood-pressure high. It is during this period that the urine is increased in quantity, and its specific gravity is low. Later in the history of the disease the heart's action becomes impaired, blood-pressure is lowered, the urine decreases in quantity, and dropsical effusions and uræmic symptoms appear. The condition of the pupil bears a tolerably definite relation to the blood-pressure, so that when the pressure is high and the amount of urine large, the pupil is contracted or natural; when the pressure is low and the urine less abundant, the pupil becomes dilated (Kirk, *Lancet*, vol. ii., 1886, p. 1153, also Mickle, *ibid.*, 1154).

In uræmic poisoning, when convulsions, cephalalgia, or renal asthma constitute the predominant symptoms, we have, with the first two, spasm of the arterioles of the cerebral cortex; in the last, spasm of the pulmonary arterioles (Dr. Stephen Mackenzie, *Lancet*, vol. ii., 1889, p. 263), and, at the same time, rapid and ordinarily feeble pulse, low blood-pressure, dilated pupils, and diminished secretion of urine. In the case of renal asthma there is, as stated, spasm of the pulmonary arterioles; as a result of the consequent dyspnœa there is imperfect aëration of the blood; the abnormal blood, acting upon the vasomotor centres, and also upon the bloodvessels themselves (Foster's *Physiology*, Part II.), causes general arterial constriction and constriction of the renal vessels (as is shown by the actual reduction in the size of the kidney), and hence diminution in the urinary flow. The quantity of urine secreted in a given time is directly dependent upon the blood-pressure (McMunn, *op. cit.*, 13); and hence the amount of urine will be increased by any condition that increases the general blood-pressure, unless there is at the same time constriction of the renal arteries. The objects then to be accomplished under such conditions as these are: To relax the spasm of the arterioles of the lung and of the cerebral cortex; to diminish nervous sensibility, both sensory and motor; to increase the general blood-pressure while relieving the constriction of the vessels in the kidneys, thus increasing the urinary secretion. Have we a drug in the materia medica the exhibition of which can reasonably be expected to fulfil these various indications? I think we have.

In considering the physiological effects of morphine, in full therapeutic doses, it will only be necessary to inquire into its effects upon the nervous and circulatory systems and upon the action of the kidneys. Its effects upon the nervous system are to lessen sensibility, both sensory and motor, thus relieving pain and relaxing spasm. Acting upon the circulatory system it at first produces temporary acceleration of the pulse-rate, soon followed by slowing and increased fulness and force as a result of the action of the drug upon the inhibitory cardiac nerves. The blood-pressure is thus increased. There is no unanimity of opinion as to its action upon the kidneys, some authors affirming that it increases the flow of urine, and others that it diminishes the flow. At all events, it is perfectly clear that it sometimes does increase the amount of urine, and that it must do so by its action upon the blood-pressure and by the relief of local arterial constriction. When retention of urine follows the use of morphine it results from the blunted sensibility of the bladder. Morphine increases the excretion of urea in man (Sfubini, quoted by H. C. Wood, *Therapeutics*, 7th ed.), and contracts the pupil.

We thus have *à priori* the clearest and strongest possible grounds for administering morphine for the relief of the conditions named—convulsions, renal asthma, cephalalgia. The indications sought to be fulfilled—relief of spasm, alleviation of pain, increase of blood-pressure, and hence increase in amount of urine—are exactly met by the known physiological effects of the drug. At this time, however, we are fortunately not limited to *à priori* reasons for anticipating favorable results from the use of this drug; there are abundant facts *à posteriori* to substantiate the validity of the deduction that, the conditions indicated being present, neither in acute nor in chronic uræmic intoxication will morphine add to the dangers already existing, but that it will uniformly produce happy results.

The history of the use of morphine in such cases reaches back to as early as 1868, when Loomis first used the drug hypodermatically in a case of acute uræmia. Dr. Bontecou (*New York Medical Journal*, vol. xi. p. 176), in 1870, gave by this method three-fourths of a grain of morphine to a woman who had just had a puerperal convulsion; in about one hour she had another eclamptic seizure and became comatose; nevertheless, another injection of one-half grain of morphine was given. There were no more convulsions for six days, when a severe paroxysm occurred; the woman received at once one grain of morphine hypodermatically, delivery was effected, and recovery took place. R. E. Johnson (*Lancet*, vol. ii., 1889, p. 14) has reported a case of puerperal eclampsia, in a young primipara, in which the urine was scanty and contained albumin. The case was treated with large doses of tincture of opium for two or three days; the sensibility of the bladder was so blunted that retention of urine resulted, but by means of a catheter about the normal amount of urine was withdrawn. Profuse diaphoresis followed the use of the opium, the convulsions ceased, and the patient made a good recovery. Alfred Grace (*Brit. Med. Jour.*, vol. i., 1889, p. 588) has reported two cases of puerperal eclampsia treated by large doses of morphine administered hypodermatically, one case receiving one grain as the first dose: both cases recovered. Obstetric literature has for some years past been replete with favorable reports of similar experiences from both sides of the Atlantic. In fact, so uniform have these results been that it may be fairly stated that Dr. Fry (*Am. Journ. of Obst.*, vol. xxi., 1888, p. 536) gave expression to the dominant opinion when he said: "In the treatment of puerperal eclampsia, we have as palliatives chloroform, potassium bromide, chloral hydrate, and morphine. Of these, morphine administered hypodermatically is by far the most reliable." That the convulsions of puerperal women are, in most cases, if not in all, of uræmic origin, is generally admitted, so that the treatment of puerperal eclampsia, so far as palliative measures are concerned, resolves itself into the question of the treatment of uræmia.

The field of usefulness of morphine in uræmia, as stated by Purdy (*Bright's Disease and Kidney Affections*, p. 84), is not confined to convulsive seizures. Morphine is not less serviceable in the relief of renal asthma and severe headache occurring in the course of chronic Bright's disease. About a year ago I had under observation for several weeks a case of chronic interstitial nephritis. There had been one slight convulsive seizure, but the symptom which rendered the patient's life intolerable was excessively severe and continuous headache. Ordinary means afforded no relief, and finally morphine was given and with the most satisfactory result. My notes of the case show that the pupils were dilated, and that, as a rule, the pulse was slow and weak. For the thirty days during which morphine was administered the average daily amount of urine passed was 41 ounces, whereas 32 ounces had been the daily average for some days previously. As to the elimination of urea during the thirty days of morphine treatment, the amount varied from 304 to 472 grains per day, which, considering the non-nitrogenized diet of the patient, was a fair amount. Therefore, it cannot be said that in this case the opiate reduced the amount either of urine or of urea.

Dr. Stephen Mackenzie (*Lancet*, vol. ii, 1889, p. 209) reports a case of chronic uræmia, in which the most urgent symptoms were insomnia, headache, and dyspnœa; after exhausting other resources, he prescribed morphine with the most gratifying results and complete relief of all distressing symptoms. In this case, it is noted that before morphine was prescribed the patient was daily passing 4 ounces of urine of a specific gravity of 1010; the heart's action was irregular. Subsequently, while the patient was under the morphine treatment, the daily amount of urine was from 28 to 32 ounces, with a specific gravity of 1008, and the heart's action became regular and steady. Carter (*Brit. Med. Journ.*, vol. i., 1889, p. 943) treated a boy, twelve years old, who was suffering from uræmic convulsions, with hypodermatic injections of morphine, which arrested the convulsions, and the boy recovered. He has treated many other cases in a similar manner, and with equally happy results. Carter remarks that a contracted condition of the pupils is a contra-indication to the use of morphine. Ralfe also records cases of uræmic dyspnœa completely relieved by the use of morphine, with no untoward symptoms following.

The foregoing cases are selected from among very many of the same kind, which might be easily drawn upon to furnish the inductive proof of the deductive conclusion arrived at—that morphine, administered in the manner indicated, *does* relieve spasm and mitigate suffering, and does *not* interfere with the action of the kidneys. It is true that cases of nephritis have been reported in which comparatively small doses of opium or Dover's powder have been closely followed by coma and death, but in view of the facts on record and the natural history of the disease, coma and death often following very closely upon convulsions in which no opiate was used (Roberts reports a most instructive case of this kind), and when the disease was *not* far advanced, it is *not* a legitimate conclusion that the fatal issue was caused or hastened by the drug.

In therapeutics there can be but two guiding principles: the empirical, or that based upon the

results of experience, and the scientific or rational. If the facts stated in this paper are not entirely chimerical and imaginary, we are warranted by both these principles in the use of morphine for the relief of the uræmic symptoms dwelt upon, namely: convulsions, dyspnœa, or renal asthma, and cephalalgia, all accompanied by dilated pupils. Opinions and practices handed down to us from the past are, however, often clung to with great tenacity, particularly when indorsed by eminent men. The great University of Salamanca questioned the value of Newton's discovery one hundred years after the publication of the *Principia*. Innovations are looked upon with dread. In ancient Egypt, the law defined the mode of treatment to be pursued in every disease, and if a physician deviated from the prescribed methods, and his patient died, his life paid the forfeit. In the last half of the last century (Buckle, *Hist. Civilization*, vol. ii. p. 75) some bold innovator suggested that possibly the great prevalence of disease in Madrid might be due to the filth which for centuries had been accumulating in the streets and alleys of the city. A meeting of medical men was held to discuss the question and after mature deliberation they concluded that it was best to let the filth remain; that their fathers were wise men, and had not disturbed it, probably having good reasons for not doing so; that in all probability the gases arising from the decaying animal and vegetable matter rendered the air heavier, thus rather tending to lessen the prevalence of disease; and, moreover, cleaning the streets would only be an experiment, and no one could see the issue of new experiments.

Although morphine has been used in cases of acute uræmia for more than twenty years, and in cases of chronic uræmia for several years, and with results as uniformly happy as attend the use of any other drug in any other condition, and although the indications to be fulfilled call for the administration of a drug producing physiological effects identical with those resulting from the use of morphine, there are still those in the profession who are oppressed by the unsupported traditions of the past, and regard its use with apprehension.

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CHRONIC ENDOMETRITIS.[1]

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Although the title of my paper would embrace the entire uterine canal, cervical as well as corporeal, I shall restrict what I have to say to the diseases of the body of the organ, only alluding to the pathology of the cervical portion proper when it becomes necessary to do so in treating of endometritis in general. The question as to the localization of the chronic form of endometritis is rendered more prominent than that of the acute form, on account of the conflicting opinions entertained by distinguished authors and teachers. None, I believe, question the frequent occurrence of chronic cervical endometritis, but Drs. Emmet, Bennett and other distinguished authorities almost absolutely ignore the existence of chronic corporeal endometritis as a special disease, and consequently, except for the relief of hemorrhages and to meet temporary emergencies, discountenance all intra-uterine medication, relying entirely upon treatment directed to the uterine os and vault of the vagina; but the great preponderance of medical authority is adverse to the opinions entertained by these gentlemen, and with this class I am entirely in accord. Dr. Arran says: "Internal chronic metritis is more frequent in the cavity of the body than in the cavity of the neck of the womb, notwithstanding all that has been said to the contrary," and this opinion is concurred in by Dr. West and others.

Chronic endometritis and the conditions necessarily allied therewith are the most common as well as the most important diseases with which the gynecologist has to deal. Chronic endometritis is often a sequela to the acute form of the disease and is a result of repeated acute attacks. It matters not how or from what source the outbreaks originate, whether from catarrhal, specific, traumatic or internal constitutional causes, they often (but not always) constitute the starting-point from which not only the endometrium, but also all the uterine and peri-uterine structures become involved. I will venture the assertion that, while the change in structure and function of the lining membrane of the uterus often seems to be the most prominent condition and that which demands first and most careful attention, this tissue is probably never chronically diseased without a corresponding involvement of all the uterine structures. The starting-point of these troubles has of late years provoked more or less discussion and revealed differences of opinion among scientific investigators. Doléris and many others believe that acute endometritis is necessarily the initial lesion in every parenchymatous inflammation of the uterus or of the peri-uterine tissues, and that when acute lesions of these structures disappear chronic endometritis remains. Modern pathology strongly inclines to the belief that inflammatory affections of peri-uterine structures, most notably the tubes, are often secondary to involvement of the vaginal and uterine mucous membrane—and gonor-

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rhœa comes in for no small share of the blame. That chronic endometritis does often originate from acute invasions of the uterine mucous membrane there can be no question. These leave their effects upon the endometrium in inflammatory thickening and hyperplasia and in adenomatous degeneration of the abundant glandular structures, thereby unfitting the organ for the normal performance of menstruation and all other functions belonging to it, and resulting in hemorrhages and leucorrhœa, as well as numerous other morbid conditions to be described. Ziegler says that "hyperplasia of the uterine mucous membrane is very common," and that it causes "changes in structure and appearance, with polypoid and fungoid excrescences and enlarged and hypertrophied utricular glands, which when pared off by the surgeon present the appearance of adenomata." This condition of the uterine mucosa, by interfering with the circulation in the organ, probably always produces more or less hyperplasia in the uterine muscular and connective tissues. Dr. Stimson, an able writer and accurate thinker, emphasizes the importance and the far-reaching effects of this pathological obstruction in the following language: "The obstruction of the return current in the uterine mucous membrane, and the resistance of the diseased membrane often result in hæmatocele."

Probably the most common form in which we encounter the condition of the lining membrane of the uterus known as chronic inflammation, and which has all of the pathological characteristics of that disease, comes on without any appreciable antecedents. I have asserted with authority that uterine hyperplasia is often a concomitant and sequence of chronic endometritis. Now, this order may be reversed, and I may assert that endometritis is frequently dependent upon and produced by uterine subinvolution, or the condition denominated by Dr. Thomas areolar hyperplasia, or it may grow out of or develop from diseases located in other pelvic organs, such ovaritis, in which event the chronic form of endometritis comes on and develops to its pathological acme, without passing through any appreciable acute stage.

Lawson Tait, in his recent excellent work on *Diseases of Females*, asserts that "chronic endometritis may result from the acute process, but it is infinitely more frequently associated with the chronic metritis resulting from subinvolution. It is sometimes met with in young, unmarried women, associated with chronic ovaritis; it is then a fertile source of bad health, and when they come to be married, of sterility." Thus areolar hyperplasia or sclerosis of uterine tissue, by interfering with the circulation in and the nutrition of the lining membrane of the organ, brings about a state of degeneration of tissue clinically similar to, if not pathologically identical with, chronic endometritis. The thickening of tissue, the tendency to fungoid degeneration, and adenomatous conditions of the glandular structure, all interfere with menstruation and call for similar treatment. Displacements and malpositions of the uterus, by obstructing and interfering with the normal circulation, often result in the same condition and may be considered as common causes of chronic endometritis. This view of displacements interfering with uterine circulation is, however, disputed by Dr. John Williams, of London, who seems to have given some study to the matter, and who maintains that changes in the position of the organ, owing to the arrangement of the blood-supply do not at all interfere with its circulation. Many others entertain similar opinions and pay but little attention to the restoration of the uterus to its normal position in the pelvis as one of the steps necessary to the relief of its chronic inflammation. In this matter I must, however, concur with Dr. Stimson, who believes "the uterus to be an organ of very great variations in vascularity," and conclude that changes in position consequent upon hyperæmia, enlargement of the organ from whatsoever cause, relaxation of ligamentous, muscular and connective-tissue supports, all tend to throw it out of its normal anatomical relation, to interfere with the circulation and nutrition, and to develop the diseased condition of the endometrium as described.

After this brief review of the etiology and pathology of the disease under discussion, having determined its presence by the well-known symptoms and signs, having made a careful differentiation between the corporeal and cervical forms, and having excluded the possibility of malignancy (probably one of the most difficult problems which the general practitioner or even the gynecologist is called upon to solve), we come to the subject of treatment. I would formulate the indications for treatment as follows: Remove, as far as possible, all constitutional, predisposing and disease-fostering causes that may exist in the patient or in her environments; restore, as far as possible, the uterus to its normal position in the pelvis, thereby correcting the cause of obstructed circulation, and deplete the engorged tissues by all means at command; remove adenoid and fungoid vegetations from the cavity of the uterus, if they exist, and endeavor by local, therapeutic measures to restore the endometrium to a condition as nearly normal as possible. The indications are plain enough, but in carrying out the treatment to a successful result is encountered one of the most difficult problems in medicine. I will venture the assertion that the condition of the uterus, in which some or all of the pathological changes noted exist, from chronic

subinvolution to fungoid vegetations of the mucous membrane, with the corresponding train of symptoms, may be palliated by treatment, but it is not within the province of remedial measures to restore the organ to perfect normal function.

To accomplish the first indication in treatment a most rigid investigation should be instituted as to the existence of constitutional causes. Dyscrasiæ, if detected, should be combated with hæmatic reconstructives; struma, with sulphide of calcium, the iodides, cod-liver oil, etc.; arthritis, with iodine, lithates and salicylates. If anæmia or toxæmia exist to such a degree as to interfere with normal repair, tonics and ferruginous reconstructives are to be administered. If digestion and assimilation appear to be defective, an appropriate and nutritious diet, artificial digestants, tonics and eliminants, nearly always embracing arsenic in some form, are indicated. This line of medication, with a due regard for the sanitary environment of the patient, constitutes our general therapeutic resources.

To meet the next indication a great variety of measures has been resorted to. Pessaries and supporters of every conceivable design, abdominal, vaginal and intra-uterine, have been used; and while pessaries, judiciously selected and intelligently employed, after all active symptoms have disappeared and laxity of fibre and defective support of the organ remain, sometimes give great relief, I think it may be safely said that during the active existence of the disease all pessaries are worse than useless. The idea of employing some soft, elastic, light material as a support for the uterus, which, while it serves the purpose of holding the organ *in situ*, might at the same time be used as a means of accomplishing the local application of medicaments to the vagina, os and cervix, was early conceived. Soft sponge was thus employed. This article soon developed objectionable features, in consequence of its irritation to the tissues, as well as its tendency to become offensive and harbor germs and poisons. The support of the womb by a tamponade of cleaned and medicated cotton next came into use and has remained popular with the profession for many years. Drs. Mundé, Goodell and others have used this plan of treatment with great satisfaction when properly applied—so as to exert pressure upon the engorged cervix while it supports the decadent and always heavy womb. This mode of treatment evidently accomplishes good results; besides, it may be made to subserve a most valuable purpose by maintaining a constant supply of glycerin, either medicated or anhydrous, in contact with the region in which local depletion is to be accomplished. The tendency of cotton, however well prepared, to pack and become inelastic suggested the employment of some agent free from these objections; hence the introduction of jute and wool, which have been so popular of late, especially for dry treatment. The hard and irritating qualities of these textiles, with their poor absorbing properties, have been thought objectionable, and a compromise has been effected by combining cotton with the other articles, a combination which just now probably constitutes the best vehicle before the profession for vaginal tamponade.

In cases in which decided chronicity exists, with sclerosis of uterine tissue, constitutional measures will doubtless prove of but little avail in the treatment, but when there yet lingers an acute condition, evidenced by tenderness on pressure and inflammatory engorgement, much good may be accomplished by constitutional and general means. Depletion of the pelvic organs by saline purgatives, systematically employed, when the blood supply and other conditions warrant it, should not be neglected. Scarification, leeching, bleeding the os by puncturing and depletion by the use of glycerin—each has its advocates, and doubtless each possesses some merit. Iodine, in the form of the tincture, applied to the vault of the vagina is a favorite remedy with many.

Internal therapeutic remedies are almost universally employed in this class of cases. Ergot, for its supposed influence in cutting off and lessening the blood-supply to the uterus, is unquestionably a deservedly popular remedy. The iodides are extensively used in this form of chronic endometritis attendant upon uterine subinvolution, with subacute or lingering acute characteristics. Bromide of potassium is regarded by many as almost specific. Mr. Lawson Tait regards the benefit derived from this salt as due alone to the potassium, and believes that other salts of potassium besides the bromide are equally efficacious, and in some way not explicable prove valuable remedies in these cases. He is particularly partial to a combination of the fluid extract of ergot and chlorate of potassium in what I would consider extremely minute doses. I have often with satisfactory results employed the ergot with bromide of potassium, but feel inclined to attribute the results to the ergot rather than to the combination.

Some practitioners reject the whole system of local depletion, except by Dr. Emmet's method of long-continued vaginal irrigation with hot water, followed or alternated with glycerin tamponades; while I have fallen into the popular use of hot-water irrigation in nearly every diseased condition of the pelvic organs, as taught by Dr. Emmet, and believe that the treatment, when properly administered, has a field of vast usefulness, especially when the disease is located in the cervix or in the pelvic tissues below the cervix. Still I am convinced that

the treatment has become very much of a hobby with the profession, and is often made to do duty when it cannot possibly be of the least benefit. Granting all the therapeutic effects claimed for the treatment, after long investigation and study I doubt if it has any effect whatever in depleting an engorged uterus or in lessening the blood-supply to the body of the organ; except for purposes of cleanliness and as an auxiliary to other treatment, it might well be dispensed with in all diseases situated above the internal os.

Chronic endometritis, in its legitimate and almost universal course, implies a degraded condition of the tissue, characterized by a fungoid and adenomatous degeneration, with a tendency to hemorrhage and mucous and muco-purulent discharges; probably no department of my subject has provoked such wide diversity of opinion as has the treatment of this peculiar condition. Except for the relief of the fearful hemorrhages which frequently attend it, many of the best practitioners are inclined to let the interior of the uterus severely alone and not to invade it with either instruments or other therapeutic measures. While the great majority of practitioners and gynecologists strike at this symptom of the disease as the all-important matter to be combated, nearly every author and teacher in this department has his own peculiar views upon the subject. Dr. Emmet is opposed to the practice of making applications to the interior of the uterus. He claims that the discharges from the lining membrane are in general the result of hyperæmia, which is secondary to pathological or mechanical changes outside of the uterus, and that the rational treatment consists in measures directed to the cause and not to the consequence; and, therefore, except for the relief of hemorrhage resulting from vegetation, the relies upon vaginal medication applied to the os. Diametrically opposed to these views are those entertained by Doléris and a host of others, who agree with him in the main, but who differ somewhat in the methods of accomplishing the objects sought. He maintains that the lesion is in the endometrium, and that therefore the treatment must be local and directed to that particular tissue. His practice is to thoroughly dilate the cervix with aseptic tents when necessary, and then to curette the uterine cavity, swab it out with a 1:4 solution of carbolic acid and wash it out with a 1:2000 sublimate solution. Dr. Mundé also favors intra-uterine medication; he protests against the growing tendency to abandon medication applied above the internal os and believes that we herein possess a means of treatment for which there is as yet no adequate substitute.

The use of strong caustics and escharotics is favored by many. Nitric, chromic and carbolic acids, iodine and desiccated sulphate of zinc, all have their advocates; and if we can rely upon the reported cases of Rheinstädter, as affirmed by Bröso, Fränkel and Dumontpallier, intra-uterine cauterization with chloride of zinc has accomplished marvellously good results in his hands. During the last ten years he has employed the treatment in nine hundred and seventy cases. He applies the zinc twice a week; six weeks are sufficient to bring about a cure. Ergot, hot-water douches and glycerin tampons, with the zinc cauterization, will within three months reduce the largest and hardest uterus to normal conditions, both in size and secretion. Others assume a middle and more conservative ground in the treatment of chronic endometritis. Dr. Engelmann, although not entirely disapproving of intra-uterine medication, believes that its sphere of applicability is greatly narrowed and that rarely should any but the milder agents be used. Vaginal or indirect medication by means of dry tampons of cotton, wool or jute, impregnated with various agents or serving as carriers of powders, is, in his opinion, in the vast proportion of cases sufficient, and withal without the possibility of the ill-effects that may follow intra-uterine applications.

Another treatment, of late coming into vogue, in which I have considerable confidence, especially in cases of long standing and decided chronicity, is known as Vulliet's method, practised by Landau, Chrobak and many others. It consists in thoroughly dilating the cervix and packing the cavity of the uterus with gauze or wicking, medicated with iodoform or other agent. The application must be made with the patient under the influence of an anæsthetic; the packing should be removed in twenty-four hours.

Dr. Alexander Dunn, in *The British Medical Journal*, has recently reported wonderful success in the treatment of chronic endometritis with boric acid. He says that, "having obtained the most decided benefits in the treatment of vaginal leucorrhœa and erosion of the os and cervix, both acute and chronic, from vaginal applications of boric acid," he "not long since designed a convenient form of insufflation for the purpose." Thinking he could go a step further and apply the acid to the endometrium itself, he found that by means of a slightly curved vulcanite tube, somewhat larger than a No. 12 catheter, with a tightly-fitting rod or piston of the same material, the application could be safely made. The insufflator or tube is tightly filled for about two inches from its extremity by plunging the end into a vial or other vessel containing the acid and withdrawing the piston. When so filled the tube is introduced through the patulous cervix into the uterine cavity, which has previously been cleaned with a wire curette. "The piston is

pushed home and a stick of compressed boric acid is deposited in the uterus. By this simple means I have succeeded in curing quite a number of cases of this troublesome and intractable complaint, some of which had previously, both in my own practice and in that of others, resisted the usual routine caustic treatment. Judging by my own experience I should say that if this treatment be adopted as described, the most chronic cases of endometritis should yield to a dozen such applications at most, at intervals of three or four days."

After a review of these somewhat conflicting views and plans of treatment—which, while they constitute but a fraction of the methods to be found in the books and journals of the period, probably embrace the leading and most prominent ideas upon the subject—and having referred to the sure-cure, never-failing, well-authenticated plans of treatment practised by distinguished gentlemen who pursue a single and well-defined course of treatment in all cases with the single result of cure—in which I will modestly say I have but little confidence, I will proceed to give the line of local treatment that I am, as a general rule, accustomed to practise in these cases. While the curette, as has been said, is a blind instrument and capable in careless and incompetent hands of doing much mischief, yet for the removal of fungoid vegetations and adenoid degenerations from the endometrium it affords the surest, speediest and safest means as yet devised. I am accustomed to follow the curetting by an application of Churchill's tincture of iodine or diluted carbolic acid, and always precede the treatment by a careful washing out of the vagina and uterus with a solution of 1 : 1000 or 1 : 2000 corrosive sublimate, after the method of Dr. W. G. Wiley. In cases in which this treatment is not admissible, or in which it has failed to afford relief, my next reliance is in the electro-chemical action of negative galvanism in removing the vegetations, after the method of Apostoli. This is accomplished by introducing into the uterine cavity an electrode, insulated to near the point and connected with the negative pole of the battery, the other pole being connected with a large pad of moistened potter's clay, sponge or prepared cotton, placed over the abdomen. The time for the employment of galvanism should be from ten to fifteen minutes at each treatment, and the treatment should be repeated about twice a week. The strength of the current to be employed will largely depend upon the acuteness of the case and the susceptibility of the patient to electrical influence. The chronic cases always require the stronger currents. The dosage may be fixed at from ten to three hundred milliampères; the minimum is, in my judgment, too small to accomplish any results, and yet practitioners with much larger experience than mine have had to employ it. This line of treatment is free from many of the objections to other modes of treatment. It is cleanly, free from pain and exempt from danger. Unlike cauteries and escharotics, it can be limited in its influence and produces no deleterious effects upon the sound tissues; nor does it leave a raw and exposed surface, as does the curette, to absorb poisons and septic matters; while it removes the vegetations, it imparts renewed tone and vitality to the diseased organ.

DISEASES OF THE HIP-JOINT.[1]

BY ARTHUR J. GILLETTE, M.D.,
ORTHOPÆDIC SURGEON TO ST. LUKE'S HOSPITAL, VISITING ORTHOPÆDIC SURGEON TO THE UNIVERSITY DISPENSARY, ST. PAUL, MINN.

THE title of this paper, "Diseases of the Hip-joint," is used instead of "Hip-joint Disease," because the latter term is applied more generally to a tuberculous inflammation, although, with authorities, I am inclined to believe that tuberculous hip-joint disease always begins as a simple inflammation following trauma, and by inoculation subsequently becomes tuberculous. There are diseases of the hip-joint the origins of which, I am sure, are not due either to injury or to tubercle bacilli, but which are constitutional diseases with local manifestations.

I am prompted to choose this subject for two reasons:

First. At the onset, these cases always have the same clinical appearance as those of the more chronic, or of a true tuberculous nature, and in several instances my prognosis did not prove correct, although I am sure that my diagnosis was undoubtedly accurate as regards an inflammation of the hip-joint.

Second. On several occasions, when I gave a prognosis in cases of chronic hip-joint disease, the family physician informed me that, by rest in bed, and extension by weight-and-pulley, he had cured cases of hip-joint disease in a few weeks. Thus was strengthened my belief in an inflammation non-tuberculous in the beginning, but with subsequent inoculation—usually occurring before it is placed in the hands of the specialist, and hence running a chronic course, with effusions and rupture of the joint capsule. Dissection of the soft parts may follow by the effusion becoming purulent, because of the breaking down of the soft parts, or of infection following the opening. This emphasizes the most important feature in the treatment of hip-joint disease, viz., an early diagnosis—since I believe it is sometimes possible to check the progress of these cases before they become chronic or tuberculous.

[1] Read before the Inter-County Medical Society of Wisconsin, March 10, 1891.

The occurrence of peritostitis in the long bones, following scarlet fever, measles or typhoid fever, is not at all uncommon. Dr. Keen[1], of Philadelphia, has given a full account of all the bone-lesions following the continued fevers. He found 69 cases, of which 22 affected the head, 7 the trunk, 6 the upper and 42 the lower extremities. There were 37 cases following typhoid fever. As to the date of occurrence in 47 cases, 10 were within two weeks, 27 from three to six weeks, and 10 some months after the fever. Keen's explanation was that the earlier cases probably came from clot, and the later from enfeebled nutrition. He found that the periostitis arose spontaneously or as a result of slight injury.

V. P. Gibney[2] read an original article before the American Orthopædic Association, entitled "Typhoid Spine," in which the clinical aspect resembled very closely that of beginning Pott's disease. In this paper he reports cases of disease of the hip which bear a close resemblance to tuberculous hip-joint disease. One was that of a young lady, eighteen years old, convalescing from typho-malarial fever and suffering with acute pain in the hip. Any movement of the limb would excite cries of pain. She was not of an hysterical, but rather of a lymphatic temperament. Weight-and-pulley and a traction hip-splint afforded relief in less than a month. A few months afterward there was no lameness, pain, or reflex spasm, although, as compared with the other limb, there was some limit to the free range of motion. Dr. Gibney's conception of the pathology was a circum-articular lesion confined to the periosteum or ligaments. Another case was that of a boy aged thirteen. For four or five months after having had typhoid fever, while confined to his bed, he kept both limbs flexed on the abdomen, and during convalescence was unable to straighten them. He was poorly nourished, and quite unable to walk. The thighs were sharply flexed on the pelvis, the legs on the thighs, the heels touching the buttocks. Any attempt at motion of the right thigh caused reflex spasm.

At the meeting referred to all the members seemed to acquiesce in the views of the author, and many reported cases of joint-troubles occurring in their own practice, following acute severe fever, the exanthemata, etc.

There is still another constitutional affection that I believe accounts for many diseases of childhood, and which often manifets itself in the form of joint-disease. I refer to hereditary syphilis; and I would ask the general practitioners present: How many cases of acquired syphilis continue the treatment so long as you advise? Do they remain under your care after the initial sore is well? I have carefully questioned a number of fathers whose children I was treating for joint troubles, and have been somewhat surprised at the number who acknowledged that at some time previously to their marriage they had had suspicious sores. I am also aware that syphilis usually manifests itself by pemphigus of the hands and feet, various eruptions, a copper-colored discoloration of the skin, characteristic snuffles or coryza, stomatitis, laryngitis, etc., and that all these symptoms usually occur before the end of the first year; but there are well-authenticated cases of hereditary syphilis in which the disease did not make its appearance until the twentieth and twenty-fifth years.

Some time ago a patient, a child not quite two years old, was sent me from a neighboring town, exhibiting all the symptoms of double hip-joint disease, and with no history of an injury. The disease had existed in the left leg for some months longer than in the right. The parents gave me the following history: The child had always been remarkably healthy, well-developed and intelligent, never having had any eruptions, although the parents thought it had been troubled with "snuffles." The teeth appeared punctually, and the fontanelles closed early. About three months prior to my seeing the child the first symptoms exhibited were loss of sleep and night-cries. At times, if the left limb was handled a little roughly, the child would cry, but at other times this did not seem to produce the slightest uneasiness. From day to day it was observed that the child held the limb flexed and adducted; following this the right limb became tender, was soon flexed and adducted in the same manner, so that when I saw the child both limbs were adducted, both thighs were almost completely flexed upon the abdomen, and the legs flexed upon the thighs. In this position the child had been for a number of weeks, and in all my experience I have never, in any disease, witnessed a patient suffer such agony and excruciating pain. The slightest jar of the floor or bed would cause pain. When I saw the child, movement being so intolerable, the napkins had not been changed for a number of days. It was impossible to make an examination without etherization. Upon extension of the limbs there was the characteristic lordosis of the spine. After etherization this entirely disappeared. The left leg, in which the disease first manifested itself, was one quarter of an inch shorter than its fellow, although it appeared longer. This, of course, was due to the tilting of the pelvis. I applied a plaster cast to keep the joints quiet. A general practitioner, administering ether, called my attention to the gums and teeth, which had the

[1] Trans. of Amer. Orthopædic Assoc., vol. ii. "Typhoid Spine," by V. P. Gibney.

[2] Ibid., vol. ii.

exact appearance described by Hutchinson. The gums were of a highly congested, swollen and peculiar spongy appearance. The child had also a severe laryngitis. The immobility of the hips did not relieve the pain. After a few days I applied a weight-and-pulley, and the child was asleep before I left the hospital. The flexion was not overcome so rapidly as usual under this treatment, although the pain was almost completely relieved. I then began the administration of mercury, both internally and by inunction. From the very time that this was administered the child began to improve. In ten days or two weeks, every bit of pain about the hips had disappeared, the inflammatory condition of the mouth was completely relieved, and at the end of six weeks the little patient was apparently well. Six months have now passed, and the child has not had any local treatment for three months; the hips are freely movable in every direction, and the child, to all appearances, is in perfect health. This history, together with the fact that the father acknowledged he had suffered from a sore on his penis, proves conclusively that it was a syphilitic hip-joint, pure and simple.

Another case, I am sure you will agree with me, was undoubtedly syphilitic; it was referred to me by Dr. Sweeney, of St. Paul. The disease was of the right hip, in a boy aged seven years. There was apparent lengthening, but actual shortening; there was atrophy of the calf and thigh, but only slight tenderness; the leg was abducted and slightly flexed. The mother gave a history of the boy having had a similar attack four years previously. At that time the joint was very painful, and was put in a plaster cast; following this a peculiar eruption appeared, which puzzled the attending physician. A consultation was called and medicine given that caused the disappearance of the eruption, the symptoms about the joint immediately clearing up, and the child up to the present time seeming perfectly healthy. I applied the long traction-splint, and the mother, without consulting the family physician or myself, left for the country. I did not see the child again for three months, when I was called, and found the child, of course, in a very much worse condition than when I first saw it. The thigh was flexed, the joint exceedingly tender, and there was swelling all about the hip. I had, in fact, a typical picture of a tuberculous joint. I reapplied adhesive plaster and a splint, and advised rest in bed. I continued this treatment for about ten days, with but very little or no improvement. The mother called my attention to a peculiar eruption, which, she said, had appeared some time before, mostly on the upper part of the child's body. It was of a dull brownish-red color, with an ulcerated top, and varying in size from a pea to a nickel. At my request Dr. Sweeney was called, and he immediately placed the child under anti-syphilitic treatment. The child's general condition immediately improved, the aggravated symptoms about the joint disappearing as if by magic. I have since learned that from the habits of the mother she would be a very fortunate woman indeed if she had not at some time been infected with syphilis. The father was also immoral. The child is still wearing the brace, and I fear has now a tuberculous hip, although I believe the origin of the disease was due to syphilis. Without doubt, syphilis is a distinct causative factor of rickets, and it is clearly demonstrated that among children affected with hereditary syphilis tuberculosis is rife.[1]

A CASE OF PICROTOXIN-POISONING; WITH REMARKS.[2]

BY EDWIN B. SHAW, M.D.,
OF OSAGE CITY, KANSAS.

ON account of the infrequent use to which cocculus Indicus and its active principle, picrotoxin, are put, the intelligence of this Society will not be impugned by assuming that all its members are not familiar with the drug. A careful search has resulted in finding but five reported cases of picrotoxin-poisoning, two of which are open to doubt, so that the one about to be presented will be the sixth case on record.

Sometime during the month of October, 1890, by the courtesy of Dr. John W. Elston, then coroner of Jackson County, Missouri, I was permitted to witness a post-mortem examination in the case of a man dead after taking a concentrated tincture of cocculus Indicus.

A. H. N., fifty-one years old, a native of Germany, had been in poor health for ten years. About five years ago, when suffering from bronchial catarrh, he purchased, as he supposed, some wild cherries, which he requested a druggist to put in a half-pint flask, to be filled with brandy. Of this he, with two other members of the family, took teaspoonful doses at irregular intervals, without experiencing any untoward effects. The flask was then put away, and remained undisturbed and forgotten until about two weeks prior to the time of the man's death. At that time he took the flask, containing the dry berries, which he still supposed to be wild cherries, and had it filled with whiskey. Of this tincture he had been taking small doses for upward of a week. One morning, at about 10 o'clock, he took a considerable quantity from the flask, afterward complaining of feeling dizzy and sick at stomach. He excited vomiting by tickling the fauces, and expressed himself as feeling relieved, but in a few moments fell to the floor in a convulsion. Convulsions of a tonic

[1] Annual of Universal Medical Sciences, vol. i., 1890, No. 29.

[2] Read before the Eastern Kansas District Medical Society, at Topeka, Kansas, April 14, 1891.

and clonic character followed in quick succession, till death closed the scene. During the convulsive stage unconsciousness was complete. A period of thirty minutes elapsed from the time of taking the tincture till death ensued.

The post-mortem examination was made at 8 P.M. of the same day. Rigor mortis was marked. The body was excessively adipose. The abdominal walls were two and one-half inches thick. The lungs were healthy. The right was adherent throughout the chest. The heart was contracted in systole and empty, and perfectly healthy. The liver was fatty and enlarged. The spleen was flabby and friable, and normal in size. The kidneys were fatty and enlarged. The stomach was excessively dilated and empty; the mucous membrane was congested in spots. Unfortunately the brain and spinal cord were not examined.

To the credit of the pharmacists of Kansas City, be it said that the berries were sold by a speculator who had possession of and conducted the drug-store temporarily. One at all familiar with the appearance of the wild cherry and the fishberry could scarcely mistake the one for the other.

Dr. W. B. Thompson, of New York, has reported death, preceded by violent tetanic spasms, in a child six years old, following the application of a strong tincture of the fruit to the scalp. A case of fatal poisoning by cocculus Indicus is reported by Dr. Sozinsky (The Medical News, November 3, 1883); another by Prof. Mitchell (*Therapeutics*, Philadelphia, 1850).

Blythe, in his work on *Poisons: Their Effects and Detection*, reports two cases of poisoning by picrotoxin. "In 1829 several men suffered after drinking rum impregnated with cocculus Indicus; one died, the rest recovered. In the second case a boy, aged twelve, swallowed some of a mixture used for poisoning fish, the active ingredient of which was cocculus Indicus; in a few minutes he experienced a sensation of burning in the mouth, with pains in the œsophagus and stomach, frequent vomiting and diarrhœa. A violent attack of gastro-enteritis supervened, with fever and delirium. Death took place on the nineteenth day."

The two cases recorded by Blythe are certainly not clearly established examples of picrotoxin-poisoning. In fact, the boy in the second case presented few of the symptoms of picrotoxin-poisoning. This leaves but three fatal cases, excluding the case just reported, that are indisputable cases of picrotoxin-poisoning.

Although of not much practical importance, yet a brief study of the natural history, physiological action, toxic effects and therapeutical applications of cocculus Indicus, with a report of the changes found post-mortem in fatal cases of poisoning, will not be entirely without interest.

Cocculus Indicus is a native of the Malabar Coast and of Eastern insular and continental India. "As found in the shops, cocculus Indicus is a roundish berry, somewhat kidney-shaped, about as large as a pea, having a thin, dry, blackish, wrinkled exterior coat, within which is a ligneous, bivalvular shell enclosing a whitish, oily, very bitter kernel. It is without smell, but has an intensely and permanently bitter taste. It bears some resemblance to the bayberry, but is not quite so large, and may be distinguished by the fact that in the cocculus Indicus the kernel never wholly fills the shell."

Picrotoxin, the only active principle that has been made use of in medicine, is poisonous. Given to dogs in doses of from five to ten grains, it produced death, preceded by violent tetanic spasms, which, according to Dr. R. M. Glover, are very similar in character to those produced by Flourens by section of the corpora quadrigemina and cerebellum, being attended with backward rotary movements and tetanic spasms. Dr. Crichton Browne, by carefully-made experiments, has shown chloral hydrate to be antagonistic to the action of picrotoxin; anæsthetics and all relaxing and motor-depressing agents are antagonistic to its convulsive action. The action of strychnine is very similar, but differs somewhat in the character of the resultant spasm. In strychnine-poisoning the spasm is of a tetanic character, and the action of the cerebrum is not suspended till shortly before death. In picrotoxin-poisoning, a feeling of drowsiness precedes the convulsions and increases to profound coma with their continuance; the spasms are of a tonic and clonic character, principally, however, clonic. Recent experiments seem to show that the poison acts on the spasm- and vagus-centres in the medulla, and on Setschenow's inhibitory centre. Boeber finds that the electrical reactions of the nerve and muscle remain unchanged, proving that the effect of the poison is expended upon the centre and not upon the periphery. Bartholow, with several other authorities, states that the heart stops in diastole, the cavities full, the capillaries at the periphery empty; while the post-mortem examination in the case reported disclosed the opposite. Bartholow also affirms that picrotoxin is non-irritant to the gastric mucous membrane. This is quite improbable, because it is almost certain to produce nausea and vomiting. A portion of the poison remains in the blood, as is shown by the fact that flies are poisoned by drinking the blood in a fatal case.

Cocculus Indicus has long been used in India to stupefy fish, in order that they may be caught. It has been put to the same use in this country and in Europe. No cases have been reported in which unpleasant results attended eating fish caught by this means.

An ointment made of the powdered fruit has long

been used by the laity to destroy pediculi corporis, and it is claimed to be quite efficient in the treatment of tinea capitis. Being a cerebro-spinal stimulant, cocculus Indicus has been used in the treatment of a large number of diseases, but being possessed of so little real value, it is now never used except as a local application for the destruction of vermin.

[Picrotoxin has been used as a substitute for strychnine, in cases in which strychnine was indicated. In combination with belladonna it has, in the hands of some, acted happily in controlling the night-sweats of phthisis.—Editor of THE MEDICAL NEWS.]

MEDICO-LEGAL CASES.

BY HENRY A. RILEY, ESQ.,
OF NEW YORK.

Murder and Matrimony.—The recent execution of Eyraud in Paris for the murder of Gouffe, and the sentence of his accomplice, Gabrielle Bompard, to imprisonment for life, have served to keep this case in the public mind, and physicians have good reason to remember it for the claim made by the woman that she was hypnotized at the time of the murder, and the offer made on the trial to put her again under such influences. The morbid regard for women who commit murder is one of the curious circumstances connected with crime, and it is said that an appeal has been made for the pardon of Gabrielle Bompard by a man who promised to marry her if freed from prison.

The same offer was made in the well-known case in New York of Mrs. Druse, who, aided by her children, killed her husband, chopped him up, and boiled him. Governor Hill was asked by many persons to commute the sentence, and among others by a man whose matrimonial inclinations were not disturbed by the fact that the first husband had been killed in a remarkably deliberate and cold-blooded manner. The Governor, however, refused to be influenced by any so-called humane appeals or by the matrimonial offer mentioned above, and Mrs. Druse had to suffer the penalty of her crimes.

The New York Morgue.—The New York Medico-Legal Society has recommended the placing of the morgue in New York City on a scientific basis, under the direction of a competent physician. The great advantage to be derived from the change will be the increased facilities for the detection of crime. The morgue at present is managed in a haphazard sort of way, and many abuses are charged against it.

Weak Eyes in Children.—The last Legislature of New York passed a law as follows: "Should any midwife or nurse having charge of any infant in this State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant to report the fact in writing, within six hours, to the health officer or some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside."

Health Legislation in Congress.—A large number of bills, more or less important, always fail of passage at the short session of Congress on account of the lack of time, and this is the case even when there is no special opposition to them and they have no political bias. Some of these measures related to the public health, such as the Paddock Pure Food bill, which attempted to put restraints upon the adulteration of articles of food when transported from State to State. The Conger Lard bill suffered the same fate, but this was not so desirable a measure as the other, and had been repudiated by some of the associations interested in health legislation, while the pork-packers were said to favor it. Bills for the inspection of live cattle and hogs, when exported, and of the dressed products of the same, together with an inspection of the vessels themselves, failed to become laws. However, a bill was passed prohibiting the introduction into the United States of any adulterated article of food or drink.

Is Cremation Popular?—The papers chronicle an occasional cremation of well-known persons, but it would seem that the general patronage of the crematories has not increased much within the past two or three years. The latest instance of the kind is that of Miss Emma Abbott, whose body was cremated at Pittsburg on February 17th. A short time since, a resident of Brooklyn named Meyer died and directed that his body should be cremated and the ashes thrown to the winds from the top of the statue of Liberty in New York harbor. The papers report that the direction was complied with.

Manufacturing Establishments as Nuisances.—Cases involving the question of what constitutes a nuisance which can be abated by injunction, or for which money damages can be awarded, are growing more numerous as the conditions of society become more complex. Many of the cases, and perhaps the majority, turn on points of health, and a recent action in New York is of this character. The statement of the facts shows the necessity for some legal interference. It says the nuisance is "an establishment for the manufacture of paving and roofing material, where the owner heats and boils asphaltum and other substances, which emit offensive and unwholesome gases and stenches which render the air in the locality of the plaintiff's dwelling foul and unwholesome; that by reason thereof plaintiff and his family have been put to inconvenience, discomfort, sickness, and damage; have been obliged to keep the doors and windows of their dwelling closed day and night, even in hot weather; that their food has been impregnated by such gases so as to be disagreeable to the taste and unwholesome; that fine sand and soot, and other matter engendered in the defendant's factory, have been blown into the plaintiff's dwelling to such an extent that plaintiff and his family have been deprived of the use of the front room; that plaintiff and his family have been deprived thereby of the ordinary and comfortable use and enjoyment of said dwelling and premises; that the plaintiff's wife and family have been made sick by said smells, sand, and stenches, and one of the plaintiff's daughters died from sickness caused or aggravated thereby; that plaintiff has been deprived of the services of his wife and children by reason thereof, and has been com-

pelled to pay for medical attendance on account of such sickness." The Court held that these circumstances fully warranted an action for damages.

COMPLETE OUTWARD DISLOCATION OF THE RADIUS AND ULNA AT THE ELBOW.

BY A. B. ISHAM, M.D.,
OF CINCINNATI.

IN THE MEDICAL NEWS of Sept. 30, 1882, I reported a case of complete outward dislocation of the radius and ulna at the elbow, appending a list of all the published cases of that accident that had appeared in this country up to that date—eleven in all, including my own case. To these should have been added a case reported by Dr. S. R. Towne, of Enfield, Mass., in the *Medical Record* of May 8, 1880, but which was overlooked because it appeared under an incorrect heading and was so indexed.

Recently another instance of this casualty has been met with. About midnight of Sept. 3, 1889, Mr. ——, a German, aged fifty-seven years, of spare, slight figure, while making his way home down a steep hill, lost his balance and was precipitated into a gully. His outcries aroused the dwellers in the neighborhood, and a telephone being convenient medical assistance was soon at hand. Complete outward dislocation of the radius and ulna at the right elbow-joint was found. The articular surfaces of all the bones concerned in the formation of the elbow-joint could be plainly felt. The finger could be placed in the olecranon depression of the humerus, the coronoid process of the ulna being posterior and against the external condyle of the humerus. The forearm was freely movable like the "sweep" of a flail. The increase in the breadth of the joint transversely, noted in my former case, was here particularly marked, together with the increase in the antero-posterior thickness to the outer side of the articulation, from the posterior displacement. At the inner side the internal condyle was very prominent, and there was great thinning antero-posteriorly, corresponding to the articulating surface of the humerus. There was also a right lateral deviation of the common tendon of the triceps. It may have existed also in my first case, but if so it escaped observation.

With the aid of a stout German, who held the humerus fixed, reduction was without much difficulty accomplished. I strongly extended and flexed the forearm with the left hand, while at the same time making forcible traction in a direction downward, inward, and backward with the right hand over the upper extremities of the radius and ulna anteriorly. After a few efforts in this way the double shock was felt—feeble but none the less agreeable—that announced that the bones had glided back into their proper positions. The joint was fixed with angular pasteboard splints, the forearm being held at a right angle and supported by a sling. After three days the splints were removed, and while the arm was still to be carried in a sling, gentle movements of flexion and extension, to be gradually increased in force, were directed to be practised several times daily. The result has been very gratifying, as there is no stiffness of the joint, flexion is perfect, and extension is almost complete. There being such an extensive tearing up of the structures of the joint with this luxation—the anterior and posterior and both lateral ligaments in all probability being ruptured—it is important to prevent the formation of strong adhesions by movements begun early and often repeated. In my former case, although early movement was recommended, the patient through fear of physical pain did not carry out the directions, and some adhesions formed, interfering to some degree with extension, although for this form of dislocation the outcome was unusually good and the arm is about as useful as it ever was.

In both my cases the dislocation was first backward, as shown by the position of the coronoid process of the ulna upon the posterior surface of the external condyle of the humerus. In all cases of direct fall where the arm is thrown out as a support, dislocation is commonly backward, that being the direction in which the force is most naturally distributed at the elbow-joint. A true outward dislocation would likely occur only where the weight of the body is suspended by the arm, as in dragging or being caught up by machinery, or in any event where the forearm is twisted outward, the weight of the body sustained from it being in the opposite direction. Such complete outward dislocation of the bones of the forearm at the elbow is unquestionably of rare occurrence. But if complete outward dislocations, in whatever way they may be brought about, may be included, then the accident, while it is not frequently met with, is not nearly so rare as it has been represented. This conclusion has been reached not only from my own experience but from letters received from physicians in different parts of the country after the publication of my first case, in which, after giving an account of cases they had met with, the opinion was expressed that the instances were not nearly so uncommon as the published list of cases would indicate, but, unaware of their rarity, that there had been failure on the part of the profession to report them.

The special and general works treating of dislocations devote but little space to outward luxation of the forearm bones at the elbow, and the points particularized as having diagnostic significance are the mobility of the bones entering into the joint and the ability to distinguish the articulating surfaces of the radius and ulna externally and the humerus internally. So far as I have seen, no mention is made of the peculiar appearance of the parts, the broadening of the joint, the thinning antero-posteriorly at the inner side, and the thickening in the same direction at the outer side, presenting to the eye a figure so striking that, with almost unerring accuracy, a diagnosis might be predicated upon it.

The case of Dr. Towne, previously alluded to, one case reported by Oscar Leedom in the *Med. and Surg. Reporter*, June, 1883, one case reported by Dr. W. C. Stick in THE MEDICAL NEWS for March 3, 1883, together with the case the subject of this paper, bring the whole number of cases reported in the United States, to this time, to fifteen.

THE one hundred and twenty-fifth annual meeting of the Medical Society of New Jersey was held at Long Branch, June 23 and 24, 1891. Many availed themselves of the cordial invitation extended to members of the medical profession and their families

ORIGINAL LECTURES.

HEMIPLEGIA.

Abstract of a Clinical Lecture delivered at the Bellevue Hospital.

By W. H. THOMSON, M.D.,
VISITING PHYSICIAN.

Gentlemen: The diagnosis of hemiplegia is easy to make, because the symptoms are well defined and usually unmistakable. From the standpoint of treatment, hemiplegia is scarcely a nervous disease, but rather a pure accident, resulting from disease elsewhere than in the nervous system. Our topic for to-day is, How can we prevent this great calamity?

The symptoms vary greatly, according to the seat of the accident. For instance, this man tells us that he first felt dizzy while standing, and that the dizziness was quickly followed by weakness and inability to stand. After reaching the hospital his mind was confused for only a short time. No headache had preceded the attack, and there were no other symptoms. This second patient says that, previous to his attack, there was some headache, which was not continuous. The first symptom was failing memory—he forgot words and could not perform mathematical tasks. This was followed by loss of power in the right arm and, one week later, in the leg, and then he was unable to use words.

There are three common forms of hemiplegia. The commonest follows disease of the bloodvessels, in which the coats of the arteries are rendered brittle by changes that are most readily appreciated by examination of the radial and temporal arteries. This form is called vascular hemiplegia. The form next in frequency is due to syphilitic disease, manifesting itself by changes within the skull, which are either vascular or extra-vascular. The latter are more common, and affect the brain or its coverings. These changes consist in the formation of syphilitic new growths in different parts of the brain, most commonly in the meninges. This extra-vascular form of hemiplegia is usually characterized by headache, preceding, accompanying, and frequently following the hemiplegia. In the vascular variety the hemiplegia is due to a syphilitic change in some of the arteries. It differs from the other vascular form of hemiplegia in that the arteries of the whole body are not affected, the deposits occurring here and there in the bloodvessels. This condition is not so often followed by rupture of an aneurismal dilatation as is the more usual form of vascular disease. As the syphilitic deposit gradually encroaches upon the lumen of the bloodvessels the disease shows itself somewhat slowly. In the third variety of hemiplegia the accident arises from the plugging of a bloodvessel in the brain by an embolus.

The differential diagnosis of these three varieties is of considerable importance; it is for this reason that so much time has been devoted to an examination of the arteries. This should be done quite independently of the condition of the pulse. The fingers should be placed upon the radial artery, the wrist slightly flexed, and the sensation conveyed by the bloodvessels, independently of the pulse, carefully noted. If the artery can only be detected by its beat, the vessel is healthy. If, on the other hand, the artery feels like a cord, either smooth or rough, the vessel is diseased. The vessel may feel so rough that as the finger is passed up and down, the vessel feels like a string of beads. Do not examine the pulse until after you have inquired into the condition of the artery; simply counting the pulse is but a small part of your duty.

There are six elements of the pulse to be noted, and these may be divided into two classes—*i. e.*, the cardiac and the vascular elements, dependent upon the heart's action and upon the condition of the bloodvessels respectively. The three cardiac elements are frequency, strength, and rhythm. The three vascular elements are size, quality, and length. The frequency of the radial pulse depends in nearly all cases upon the frequency of the heart-beats. The only exception to this arises when the calibre of the arteries is so much reduced by disease that the heart has great difficulty in driving the blood through them. This extra work causes hypertrophy of the heart; after a time the hypertrophied heart undergoes degeneration and dilates. When this dilatation becomes decided, the heart may have only sufficient force to propel the blood into the more distant arteries at every other beat. The strength of the pulse depends upon the force of contraction of the left ventricle of the heart. The rhythm of the pulse applies to its regularity or irregularity. By size is meant whether the pulse is full or small; if large, the artery is relaxed; if small, it is contracted. The size of the arteries is incessantly varying. By the length of the pulse is meant the time required for the pulse-wave to pass under the finger. If the artery, arterioles, and capillaries are all relaxed, so that the blood can pass rapidly through them, the pulse is short; but if there be much peripheral resistance, the pulse is long. The quality of the pulse is a most important element; it refers to the compressibility of the pulse. To determine this element, three fingers are placed upon the artery; lifting two, the third is pressed upon the bloodvessel; it is noted whether or not this manœuvre easily stops the current of blood so that it cannot be appreciated when the other fingers are again applied lightly to the vessel. If this stoppage cannot be readily accomplished, it is evident that the pulse is incompressible or hard.

Let us now see what are the practical applications of this knowledge. In case of phthisis the pulse is very compressible, but in Bright's disease or in gout it is not. Pressure sufficient to control the pulsation in phthisis is not at all adequate to control the pulse in Bright's disease. The difference in the compressibility of the pulse is particularly noticeable in two diseases that are often confounded—*i. e.*, rheumatism and gout. In the former the pulse is compressible, in the latter it is incompressible. So great is this difference that I believe, blindfolded, I could by this means distinguish between cases of rheumatism and gout.

When called to a case of hemiplegia, the first question that should suggest itself is: To what extent are the arteries diseased? The answer will influence both the prognosis and the treatment. The gravity of accidents should always be mitigated by an element of prevention, and the duty of prevention rises in importance with the seriousness of the accident. No accident can be more serious than that of paralysis; hence, the question of prophylaxis demands serious consideration. In the first

patient the artery can only be felt on the diseased side by its throb; the vessel is like that of one in health. On the sound side it can just be felt, because on this side the circulation is a little stronger. The case is either one of syphilis or of embolism, as a result of which there is hemiplegia; the patient is not old enough to show vascular changes of a non-specific character; he has not used alcohol immoderately, nor is he the subject of Bright's disease. The temporal arteries are not tortuous or prominent; this also leads us to think that the general arterial system is sound. The hemiplegia, then, is most probably due to syphilis or to embolism. Neither the history nor the physical examination points to cardiac disease, so it is not likely that there is embolism. I am, therefore, led to suspect that the hemiplegia is of syphilitic origin. The patient denies having had headache, but this is not incompatible with the theory of a syphilitic endarteritis; besides this, the hemiplegia came on gradually—first in the arm and then, about one week later, in the leg. The other patient is older, and evidently has a higher degree of vascular disease than the first patient, but by no means enough to account for his condition. His pulse is quite compressible; such a pulse is not likely to be present in a case of vascular hemiplegia. The reason for this is found in the physical conditions that determine the compressibility of the pulse, and on these the prophylactic treatment is based. It is the rule in all cases of vascular disease that the small arteries are more extensively diseased than the large ones. A hard, incompressible pulse indicates that the bloodvessel is much distended, owing to the difficulty of forcing the blood into the arterioles. If the force of the heart's action be suddenly increased by excitement, it is easy to understand that the coats of the bloodvessel might yield, forming an aneurism which, under similar conditions, might eventually rupture.

There are two ways in which the lumen of an artery may be narrowed, viz.: (1) by vasomotor contraction and (2) by disease of the arterial coats. By a nervous impression the calibre of the arteries may be so narrowed that no blood can get through. Fear gives rise to a sudden blanching of the face and a violent, tumultuous action of the heart from the consequent increase in peripheral resistance. If the heart is not equal to this emergency sudden death is the result. In this way death from drowning often occurs in good swimmers, by suddenly throwing upon the heart extra work, owing to the sudden contraction of the arteries all over the body, as a result of a plunge into very cold water. Similarly, if the heart be unable to furnish an adequate supply of arterial blood to the muscles, muscular cramp is produced.

Whatever causes irritation of the vasomotor nerves may produce an over-full artery just as perfectly as though the artery itself were diseased. Vascular disease leading to hemiplegia is in a large majority of cases due to a slow chronic interstitial nephritis, represented by the red, contracted kidney. Cases of this kind are characterized by the presence of a moderate amount of albumin in the urine, often entirely absent for days at a time. The urine is of low specific gravity and pale in color, from the deficiency in the coloring-matter that should have been removed from the blood. Under the microscope you will find almost constantly hyaline or granular casts, showing that structural changes are going on in the kidney. The bloodvessels are irritated by the excrementitious matter that is not removed by the kidneys, and the result is a chronic endarteritis. An analogous change is also very often present in the veins. Bright's disease also has a great tendency to produce "nervous storms," sudden changes in the conditions of the vasomotor nerves, that, in ordinary language, are spoken of as a "rush of blood to the head." Even in health, the urine excreted after a hearty meal is of much higher gravity and contains much more urea than the urine excreted before the meal; this is due to the fact that there is a special vasomotor arrangement for all the excretory apparatus of the body, that provides for more active secretion when an addition has been made to the system; hence, when a full meal is taken extra work is thrown upon the kidneys, in order to preserve the balance of the circulation, and if the kidney is too much damaged to do this extra work, the vascular system may suffer serious derangement. It is on this account that so many cases of hemiplegia or apoplexy occur just after a hearty meal. We see, then, how a proper understanding of the relations of the vasomotor system, and its bearing upon vascular disease, may enable us to prevent the development of the diseased conditions just described, and so avert that great calamity, hemiplegia.

TUBERCULOUS ULCERATION OF THE SKIN AND GLANDS.

A Lecture
delivered at the Philadelphia Hospital.

By ERNEST LAPLACE, M.D.,
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I bring before you a little child, with what seems to be an ulceration of the neck. It behooves us to establish a diagnosis, because the child is very ill, and we must act at once. I call your attention to the temperature, which, in the morning, is about 99°, or a little lower, and in the evening rises to about 103°, or a little higher. The pulse varies between 120 and 140. The child has a delicate appearance, and we find the neck swollen and a certain amount of ulceration. We have to determine the nature of the pathological condition. We must do something for the child, for, in spite of treatment, the temperature remains elevated. What is the cause of this elevation of temperature? Should we operate and remove the tumor regardless of the temperature? Is this ulceration the cause of the elevation? If it is, we must operate notwithstanding the elevation of temperature, for not until the disease is removed will the fever disappear.

Let us examine the case. Here is a mass extending from the angle of the jaw almost to the clavicle, a large tumor, on the surface of which the skin has ulcerated. Between two ulcerations is a bridge of skin, which furnishes a clue to the diagnosis, because the condition of the skin, with underlying ulcerations, is the same as in the case of lupus which we saw, and for which you should always look when you suspect tuberculosis. Coming from this ulceration is a grumous, cheesy substance,

which consists of epithelial cells that have undergone fatty degeneration. Examining the location of this tumor, we find that it exists over the region of the cervical glands; that these are enlarged, and that they are not freely movable on the subjacent structures. Because a tumor is not freely movable, you need not necessarily conclude that there is an infiltration of the underlying structures by the disease process. You know that in the differential diagnosis between carcinoma and benign growths we palpate to determine whether the growth is movable or immovable. If movable, it is a sign that it has not thrown roots (if you will pardon the expression) into the subjacent tissues. If immovable, it is a sign that it has thrown its roots into the underlying structures. In this case the tumor is only slightly movable. This is not due to infiltration; the tumor is simply bound down by the tissues about it. This has been of gradual development, and the child has not been well at any time since the process began. It first grew as a hard lump, softened, and then ulcerated, and is an example of tuberculosis of lymphatic glands.

Aside from this I draw your attention to a few points: Blonde children are more disposed to develop tuberculosis or scrofulosis than brunettes; fair-haired, blue-eyed, light-skinned children are more likely to develop one or the other of these diseases.

This child was brought here a few days ago by the mother, and as we have not seen the latter since, we cannot operate now, as we had intended. In the meantime we will give the child tonics, in order to put it in the best possible condition. As a rule, in these cases, not one or two, but a great many glands are affected. As they are deeply situated around the carotid artery and jugular vein it becomes a delicate operation to remove the glands completely, usually necessitating careful dissection from the clavicle nearly up to the angle of the jaw, and this requires time and attention.

The next case is a patient who also has an affection of the glands, and here I want to differentiate these two affections. This man was struck by a rock, and as a result received what is called a contused lacerated wound of the scalp. Not a sharp, incised wound in which the bloodvessels are cleanly cut and no harm is done to their structure, but a contused wound from a blunt instrument, as a result of which the bloodvessels are bruised and neighboring cells destroyed. Such a wound will not heal by first intention, because the cells have been destroyed outright. Wounds of this kind are dangerous, because a certain amount of tissue is of necessity destroyed, and there is sloughing of the parts; the wound may also be easily infected, and there may be other trouble to contend with. There may be infection of the parts and the attendant results: general septicæmia or pyæmia, or, what is of less importance and what has taken place in this case, a local infection which has been intercepted by the lymphatic glands in the neighborhood. This man came to the hospital without being able to tell us much about the wound. He said he suffered from a lump on the side of the neck. It would be a mistake to operate in such a case without considering the possibility that the tumor might have some connection with the contused and lacerated wound of the scalp, though on the opposite side of the head.

Inasmuch as this growth has developed after the reception of the wound on the head, and inasmuch as it presents certain acute symptoms (being red and painful), we know that there is taking place in that gland a certain acute process; what is it? Nine-tenths of all acute processes of this kind are either directly or indirectly due to the local development of the streptococcus pyogenes aureus, the local germ of suppuration, with which we must become acquainted just as intimately as we are with the alphabet, for we never get an abscess or any suppuration without the presence of these germs, at least when the trouble has been produced by an infection. Later I shall have occasion to speak to you of aseptic pus, in which there are no germs, which is produced by chemicals, such as corrosive sublimate, and which, acting on the skin, produce pus without germs; but all these acute processes, resulting from local infection, contain this germ, and we must learn all about it. Here we have a swelling, a tumor, which is painful, but not well defined. We do not find it as a mass under the skin, but sloping in all directions. It is painful not only at its summit, but also in the neighborhood thereof. Not only is the gland below affected and the seat of an inflammation, but the tissues about it are more or less infected. Recognizing that the process is gradually extending, we know that the cause is still present, and that unless it is removed only one thing can follow, and that is local suppuration.

Through the wound in the scalp germs have found entrance, and received by the gaping mouths of lymphatics, they have travelled down to this gland, which has strained the lymph and retained the germs. Here in the gland, just as in the test-tube in the pathological laboratory, a colony develops at the expense of the substance upon which the germs grow. Blood comes to the part, white blood-corpuscles are killed; they collect as pus and an abscess results. This will occur unless one thing be done. If we wish to stop the growth of the germs, we must enter the parts with an agent which will destroy them. Agents of this kind are called antiseptics. We must open the wound in the scalp, carefully cleanse it, removing all dead tissue, and apply antiseptic dressings, which will not only destroy the germs now present, but also prevent other germs from entering the system. That being done, our attention must be directed to the infected gland. How must we treat this? Please remember that you must never apply a poultice under such conditions as here exist. Never, because you have a swelling, apply a poultice. What do we accomplish with a poultice? We bring the affection to a "head," which means promoting the development of germs and the formation of pus, which is the reverse of what we wish to do. Therefore, do not put on heat and moisture, which would supply the favorable conditions for the development of germs. We must place there moisture, if you wish, but moisture in conjunction with something which, when it penetrates the skin, will destroy the microorganisms; the inflammatory process being stopped, no abscess will be formed. Therefore the treatment is the continuous local application of an antiseptic; not warm, of necessity, but cold. Generally, the modern poultice is antiseptic. Instead of simple warm water, with the flaxseed meal, use a 1 to 1000 solution of corrosive sublimate, or a 1 to 2000 or 3000 of the acid sublimate, and keep the poultice applied to the parts. The flaxseed meal

retains the moisture and retards evaporation. The antiseptic solution will penetrate the parts, causing contraction of the bloodvessels and destruction of the germs, and will check the inflammatory process going on.

CLINICAL MEMORANDA.

BROMOFORM AS A TOPICAL APPLICATION.

BY SOLOMON SOLIS-COHEN, M.D.,
OF PHILADELPHIA.

I HAVE recently employed bromoform in a severe case of ozæna as a topical application to the nasal mucous membrane after thorough cleansing with hydrogen dioxide. The absence of the severe local reaction anticipated, together with the extraordinary success of the measure, not only in destroying the odor but in controlling the morbid secretion, encouraged me, after preliminary trial upon my tongue and pharynx, to use the same agent as a topical application to tuberculous and other ulcers of the larynx, after cleansing with hydrogen dioxide. Here the agent seemed to exert analgesic as well as disinfectant properties, as pain was relieved and healing apparently promoted. The agent being extremely volatile, the immediate effect is transient, and I have, therefore, followed the application of bromoform with insufflation of iodoform in powder. While this somewhat obscures the therapy, yet the effect was better than when iodoform had been used without bromoform in the same cases. This preliminary note is published at this time to induce further trial and report by others.

219 S. 17TH ST., JUNE 15, 1891.

MEDICAL PROGRESS.

Diphtheria.—LÖFFLER, RAUX and WACHSMUTH contribute in the *Jahrbuch für Kinderheilkunde* the following:

Patients with diphtheria should, of course, be isolated, and placed in a room containing only the barest necessaries in the way of furniture. All the surroundings of the patient must be freed from bacilli by the use of superheated steam. Children who have had diphtheria must be kept out of school at least four weeks. The resisting powers of the bacillus of diphtheria are such that it can retain its vitality in large and moist membranes for from fourteen to sixteen weeks. Löffler is not quite certain that diphtheria can be transferred from animals to human beings, but he believes that the bacillus may locate upon unbroken mucous membrane; hence, for prophylactic purposes, the necessity of the use of mouth-washes for children. A 1 : 10,000 solution of sublimate may be used for this purpose. He does not believe that climate has so much to do with the danger of contracting this disease as bad hygienic conditions. His conclusions are:

1. The diphtheritic spore is the cause of the disease, and is to be found in the diseased mucous membrane.

2. So long as any traces of diphtheritic exudate remain, the bacillus or spore may be found, and in some cases it may be found after such traces have disappeared.

3. In dry membranes the spore will retain its vitality four or five months; hence the necessity for disinfecting everything which might come in contact with the diseased excretion. This may be done by boiling, or by subjecting to steam at 100° C. The floors should be washed with a 1 : 1000 solution of sublimate, and the walls rubbed with bread.

4. The bacilli retain their vitality longer in moist than in dry surroundings, hence moist and dark rooms are favorable for their development.

5. The bacillus of diphtheria thrives very well outside the body, at a temperature of 20° C.; it also grows very well in milk; hence the necessity for careful regulation of the milk business.

6. The diseases which resemble diphtheria in certain animals are not caused by the bacillus that causes diphtheria in human beings, nor will the former give rise to diphtheria in human beings.

7. The etiological identity of diphtheria in cats with that in human beings has not been proven.

8. Lesions of the mucous membrane favor the development of the bacillus of diphtheria, but are not essential thereto.

9. The influence of certain meteorological factors in determining the spread of diphtheria has not yet been positively shown.

Roux affirms that the diagnosis of diphtheria cannot be bacteriologically determined with certainty until the middle of the second day of the disease.

In regard to treatment: the use of antiseptic irrigation must be continued until the bacilli have disappeared from the mouth. Such treatment should continue from eleven to fourteen days. The furniture of the sick-room and all the surroundings should be disinfected with boiling water or steam, the patients should be isolated, and antiseptic irrigation should be continued as long as any trace of angina remains.

Wachsmuth recommends the following prophylactic precautions:

1. The yard contiguous to the house in which diphtheria has prevailed should be disinfected.

2. Places in which dust accumulates should be disinfected with carbolic acid, and the dust collected and carried away.

3. Means for producing perspiration are among the most efficient agents in the prophylaxis of diphtheria. —*Archives of Pædiatrics*, May, 1891.

Opening of the Mastoid Process.—HEIMAN says: Throughout Europe the mastoid process is opened with the hammer and chisel. I also operate principally in the same manner, and until lately only with the chisel, as this method is the least dangerous, the wound remaining clean during the operation, and easily kept under observation. A few months ago the surgical department of the hospital received a trephine à crémaillère for operations on the bone. It is precisely the same trephine which Pasteur uses in his investigations on animals. I was advised to use the instrument for opening the mastoid process. I have done so twice, and once the operation was done by the consultant of the surgical department. No conclusions can be drawn from these three operations, and I shall therefore confine myself to giving the impressions which this method of operating made upon me:

1. The removal of the compact portion of the mastoid

process, especially when it is thick, is much more rapid than with the mallet.

2. The edges of the wound need not be smoothed off after the operation.

3. The different size of the trephines permits the formation of a wound in the bone of the desired size.

4. Shock, which can be avoided with the hammer only to a certain extent, is entirely obviated with the trephine.

5. The depth of the wound can be graduated with exactness.

An inconvenience, however, lies in the fact that the wound can only be inspected when the trephined piece of bone has been lifted out, which in sclerosed bone may not be easy. For operating in the mastoid cells the sharp spoon is sufficient. The true value of this method can be ascertained only after a large number of operations, performed by various surgeons. I believe that in opening the cranial cavity for the evacuation of cranial abscesses the trephine is to be preferred even to the broad chisel, because in removing a large piece of bone with the latter instrument we must operate a long time with it, so that the shock must be quite severe, which with the trephine is not the case, even when applied at several adjacent spots.—*Archives of Otology*, April, 1891.

Rheumatic Hyperpyrexia Without Cerebral Symptoms.—ROSENTHAL (*Deutsche medicin. Wochenschr.*, No. 11, 1891) reports a case of rheumatism in a male, thirty-one years old, that for a week ran the usual course, the temperature not rising above 102.2°. There was sleeplessness, which resisted treatment with morphine and chloral. On the eighth day the temperature suddenly rose to 104°, and the breathing became bad. From 104° at 5 P.M., the temperature rose to 105.8° at 10 P.M., to 108.9° at 12.45, and to 110.5° ten minutes later. Death took place at 1.30 P.M., when the temperature reached 111.6°. Sweating, which earlier had been rather profuse, gave way, with the setting in of the hyperpyrexia, to a hot, dry skin. Consciousness was retained until within an hour and a half of death, with entire absence of cerebral symptoms.

A Case of Multiple Sclerosis with Intention-tremor in the Face.—COHN (*Deutsche medicin. Wochenschr.*, No. 13, 1891) reports a case of multiple sclerosis, in which intention-tremor of the muscles of the face was present, and in which the differential diagnosis from paralysis agitans was, to say the least, exceedingly difficult. The patient was a woman of thirty-four, without neurotic family history, save, perhaps, for tremor and impairment of gait in the mother. Following a labor, some difficulty in walking was noticed, and later, tremor in the left arm on attempted movement. Speech was said to have been affected. The condition became aggravated after a subsequent labor. The tremor advanced to the right arm, and there were pain and stiffness of the neck. The facial expression was fixed; muscular movements were performed tardily, and were accompanied by tremor of the eyelids and lips. The chin-reflex was emphatic. Tremor of the upper extremities continued during rest, but was more marked when attempts at movement were made. The fingers were fixed as in writing, the middle, ring and little fingers of the left hand being in constant motion. Change from the sitting posture to the erect was performed slowly and was attended with tremor of the extremities. The gait was propulsive; the forearm was flexed on the arm, the hand on the forearm. Passive movement of the rigid parts caused pain. There was spontaneous pain in the back; also restlessness, readiness of fatigue and sense of heat. The right half of the body was weaker than the left. In favor of the diagnosis of paralysis agitans were the constant tremor, the weakness, the rigidity, the facial expression, the position of the hands and arms, the propulsive gait, the pains, the sense of fatigue and the restlessness, the sense of heat, without elevation of temperature; in favor of multiple sclerosis, the age of the patient and the intensification of the tremor by attempted movement. In the further course of the disease, nystagmus, upon both lateral and vertical movement of the eyeballs, developed. As to the possibility of an association of paralysis agitans and multiple sclerosis in the same patient, Cohn could find in literature but one case. In this an autopsy revealed the presence of multiple sclerosis, the symptoms of paralysis agitans only having been present during life.

The Insane in the United States.—According to the *Abstract of Sanitary Reports* of the United States Marine-Hospital Bureau, May 29, 1891, the total number of insane persons treated in both public and private institutions during the year 1889 was 97,535, while during the year 1881 there were 56,205 treated, showing an increase in the nine years of 41,330, or 73.53 per cent. This percentage of increase, when compared with the percentage of increase of population in the last decade, namely, 24.86, does not indicate an increase in the proportion of insane persons to population, but rather a great increase in the amount of asylum accommodation provided, and a willingness on the part of the public to make full use of all the facilities thus provided. The figures for the actual number of insane in the United States cannot be determined until the work of eliminating all duplicate reports of cases has been completed.

In 1889 there were 38 private institutions in the United States for the treatment of the insane, 25 located in the North Atlantic States, 12 in the North Central States, and 1 in the South Atlantic States.

The ratio to each 1000 inhabitants of the whole United States of the insane in public institutions is 1.46, and, including both public and private institutions, 1.56.

Water Supply and Tapeworm.—The citizens of Glasgow glory in their matchless water supply taken from Loch Katrine, but they are subject to periodical scares regarding alleged dangers by its use. Once it was the assertion that the water was too soft and rickets would become prevalent. Next it was the risks of contamination that would arise from the little steamers that ply the loch in the summer season, and the inevitable excretal discharges that would imperil the health of the water-consumer. Both of these suspicions lost their force when the passage of events disclosed no evil results. The latest alleged danger is a peculiar one, and exists in the fact that the trout of the lake are infested with tapeworm, but this very unsavory suggestion has been shown to be a groundless cause of alarm, by an investigation made by Dr. J.

B. Russell, the medical officer of health, and by Professor Young. These investigators report, that while it is undoubtedly a fact that trout suffer from the parasite as has been stated, yet they do not consider that there is special risk that tænious disease will be propagated through the channel of the water supply. On the contrary, it is their conviction that the records will show that there is less rather than more of tapeworm complications among Glaswegians—as Scott would term them—when compared with the residents of other localities in Scotland.

The Results of Removal of the Breast.—As a result of partial or total removal of the breast in one hundred patients, in the treatment of tumors of various kinds, between 1880 and 1889, Terrillon (*Bulletin Gen. de Thérap.*, May 15, 1891) has arrived at the following conclusions: the gravity of the operation is insignificant; recurrence seems to be the rule when the axillary glands are involved in the disease; when mammary tumors are malignant or of a mixed character, the entire gland and involved lymphatic glands should be removed if recurrence takes place; the operation may be repeated once or several times, especially if primary union of the skin can be secured; by this means the condition of the patient is ameliorated, the drain attending ulceration is obviated and the unfavorable course of the disease seems to be retarded.

The Arterial Tension in Phthisis.—Marfan (*La Méd. Moderne*, May 21, 1891) has observed that, in cases of phthisis, with or without fever or treatment, the arterial tension is, from the outset, lowered. With active fever or the approach of death, the tension falls still lower.

Œdema of the Larynx in the Course of Bright's Disease.—Mendel (*Annales des Malad. de l'Oreille*, etc., May, 1891) reports the case of a man, fifty years old, who for twenty years had noticed transitory swelling of the feet, hands, scrotum, and face. Albumin was found in the urine. On one occasion, he was suddenly seized with difficulty of speech and respiration. The symptoms became so aggravated that suffocation was feared. On examination, the velum, especially the anterior pillars, the uvula, the left pharyngo-epiglottic fold were found red and swollen, the epiglottis being displaced to the right. The throat was sprayed with carbolized water and a milk diet was prescribed. In the course of a few days the œdema had disappeared. On the posterior surface of the epiglottis a small, acuminated tumor, probably the result of chronic inflammation of the mucous membrane, was now noticed.

The Treatment of Pulmonary Tuberculosis by Vaccination.—Dochmann (*Medizina*, No. 6, 1891) reports three interesting observations made by Vinogradof in 1883–84.

In a woman of twenty-four, with pulmonary tuberculosis in the second stage, an attack of uncomplicated variola was followed by local and general improvement.

In a woman of twenty-six, also in the second stage of pulmonary tuberculosis, vaccination, repeated several times, and a single interstitial injection of cow-vaccine were followed by improvement of the general condition and of that of the lungs.

A student in the second stage of pulmonary tuberculosis, who was vaccinated eleven times, at the end of several months presented increase in weight and improvement in the general and local condition.—*La Méd. Mod.*, May 21, 1891.

Treatment of Burns and Scalds.—Having observed the good results obtained from the application of rubber cloth to wounds upon which skin has been grafted, as well as to the surface from which the graft has been taken, Dr. O. P. Barber, of Saginaw, Michigan, has suggested a similar procedure in the treatment of burns and scalds. The burned surface is freely irrigated with carbolized water, all necrotic tissue removed and blebs punctured. Then the entire wound is snugly wrapped in rubber tissue that has been kept in a carbolized solution. Over this is placed absorbent cotton and a bandage. The advantages claimed for the dressing are that it relieves pain, that it does not adhere to the wound, that it excludes air, and that it protects the granulations, whilst preventing their exuberant growth.

Artificial Quinine.—Trimaux and Arnaud (*Tribune Médicale*) have succeeded in producing quinine synthetically by the addition of cuprein (a base obtained from the Remijia pedunculata, a shrub or tree of Brazil belonging to the natural order of Rubiaceæ or Cinchoneæ) carefully purified and freed of all traces of quinine, to a theoretical quantity of sodium dissolved in methylic alcohol. The mixture is for several hours gradually heated with an excess of iodide of methyl. The result is quinine or methyl-cuprein. By a secondary reaction iodomethylates of quinine also form, similar to those furnished by natural quinine. Conducting the process in a closed vessel, the di-iodomethylate of quinine is obtained, the properties of which are identical with those of natural quinine. If the iodide of methyl be replaced by the chloride of methyl, so that a mixture of a molecule of cuprein, an atom of sodium, and a molecule of chloride of methyl results, which is dissolved in methylic alcohol and heated for twelve hours in sealed flasks at 212°, one obtains free quinine.—*Les Nouveaux Remèdes*, May 24, 1891.

The Puerperium in Malarial Districts.—From a study of forty-six cases in which malaria existed during the puerperium, Abelin (*Archives de Tocologie*, March, 1891) concludes that malaria does not affect the progress of labor, that it does not perceptibly influence normal uterine involution and that it is questionable if it affects the secretion of milk. It is the cachexia due to chronic malaria, rather than the malaria itself, that predisposes to the occurrence of post-partum hemorrhage. Acute intermittent fever, however, appears to predispose to the occurrence of hemorrhage and to a prolongation and increase in the quantity of the sanguinolent lochial discharge. The appearance or reappearance of malarial manifestations after labor is frequently observed; but labor is often followed by a disappearance of the signs of malaria which had been present in the later months of pregnancy. It is difficult to be certain that febrile attacks in the puerperium are malarial in character; it is first necessary to exclude local causes of high temperature in the genital organs and in the breasts. Malaria does not appear to be more intense in the puerperium

than at other times and if promptly treated it does not constitute a serious puerperal complication.—*Edinburgh Medical Journal*, June, 1891.

Transmission of Tubercle Bacilli from Mother to Fœtus.—BIRCH-HIRSCHFELD and SCHMORE (*Beitr. zur Pathol. Anat. u. zur Allgem. Pathol.*, 1891, p. 429) have reported the case of a young woman, who, early in her first pregnancy presented signs of phthisis, to which she succumbed in the seventh month. Immediately after the death of the mother, the fœtus was extracted by Cæsarean section. On post-mortem examination tuberculosis was detected not only in the lungs but also in other organs of the mother. Although the fœtus had been alive shortly before the death of the mother, it was dead when removed. The chest was at once opened, but nothing abnormal was found in the lungs. The surface of the abdomen was washed with a solution of bichloride of mercury and the cavity opened with sterilized knives. No tubercles could be seen. Small bits of the liver, spleen, and kidney were, with antiseptic precautions, placed in the abdominal cavities of two guinea-pigs and a rabbit. One of the guinea-pigs died in fourteen days. The other was killed at the end of six weeks, and many tubercles were found in the peritoneal cavity. The rabbit lived for three months. On its death many tubercles were found in the liver and lung. Tubercle bacilli were found in the umbilical cord and in the blood of the umbilical vein of the fœtus.—*Supplement to Brit. Med. Jour.*, June 6, 1891.

A New Method of Staining the Bacilli of Leprosy and Tuberculosis.—UNNA (*Monatshefte für prakt. Dermatol.*, June 1, 1891) proposes a new method of staining the bacilli of leprosy and of tuberculosis. By carrying out the following procedures the bacilli are stained brownish-red upon a colorless background.

1. Stain for five minutes in an aqueous borax-methylene-blue solution (1 : 1 : 100).
2. Wash in water.
3. Iodize for five minutes in a 5 per cent. solution of potassium iodide, containing a crystal of iodine.
4. Wash in absolute alcohol until blue clouds are given off.
5. Differentiate in creasol from a few seconds to half a minute.
6. Fix in rectified oil of turpentine.
7. Mount in balsam (a solution of yellow resin in oil of turpentine).

The method may be modified in the following manner for staining tissues:

1. Stain for five minutes in an aqueous solution of borax-methylene-blue (1 : 1 : 100).
2. Wash in water.
3. Iodize for five minutes in a 5 per cent. solution of potassium iodide.
4. Wash in absolute alcohol.
5. Differentiate from ten to thirty seconds in a solution of equal parts of glacial acetic acid, absolute alcohol and ether.
6. Harden and smooth by immersing in absolute alcohol.
7. Fix in rectified oil of turpentine.
8. Mount in balsam (a solution of yellow resin in oil of turpentine).

Good results may be obtained by omitting the fifth and sixth manipulations.

Remedy for the Stings of Insects.—As the result of personal experience, DR. WM. A. TERRY (*Dietetic Gazette*, June, 1891) recommends the application of fresh urine in the treatment of the stings of venomous insects. The application is soon followed by a subsidence of the pain and a disappearance of the inflammation. The effectiveness of the result depends upon the speediness of application. It is thought that urea is the active agent in the antagonism.

Pambotano—A Substitute for Quinine.—DR. A. E. ROUSSEL presented to the Philadelphia County Medical Society a report of eight cases of malarial fever, in the treatment of which an alcoholic elixir of pambotano or calliandra houstoni was used. Ninety grammes of the elixir, representing seventy grammes of pambotano, were administered in four equal doses, in hot, sweetened water or tea, in the course of twenty-four hours, preferably on an empty stomach. The results, while encouraging, were scarcely so satisfactory as those reported by other observers. Used in influenza, typhoid fever and phthisis, no influence upon the course of the diseases could be observed.

Saturnine Hemichorea.—GIRAT (*L'Union Méd.*, May 7, 1891) reports the case of an artisan, whose occupation necessitated the handling of red lead. He suffered with habitual constipation, and there was a blue line at the margin of the gums. One night he was suddenly awakened by a sense of formication, cramps, and irregular involuntary movements, beginning in the right leg and extending to the right arm. The intelligence was preserved; there was no fever, no paralysis. The breath was fœtid, the abdomen tender but not retracted. A sedative was prescribed, and an enema administered. On the following day the movements continued; in addition, attacks of clonic convulsions occurred. The abdominal pain increased in severity; nausea and bilious vomiting set in; the right half of the anterior abdominal wall felt hard, as if the muscles were spasmodically contracted. The enema was repeated. In the course of a few days the symptoms gradually and completely subsided.

Tuberculous Peritonitis in a Child, Cured by Abdominal Section.—ALEXANDROFF (*Wratch*) reports the case of a girl, three years and nine months old, whose father had died of tuberculosis. Diarrhœa had existed for two months; the abdomen was enlarged; dulness on percussion and fluctuation were elicited; the temperature ranged from 100° to 102°. Abdominal section was performed, the fluid evacuated, and drainage provided. A bit of peritoneum, examined microscopically, contained tubercles and giant-cells. The wound healed by primary union. The fever, however, persisted, and the fluid reaccumulated. The operation was repeated, the abdominal cavity being irrigated with a solution of boric acid. The fever now declined, the patient began to increase in weight, and eventually recovered.—*Revue Obstét. et Gynécol.*, April, 1891.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, JULY 11, 1891.

THE INTERNATIONAL HOMŒOPATHIC CONVENTION.

IN reading the reports of this Convention, just held at Atlantic City, one is persistently struck by the indifference of the delegates and speakers to what would naturally seem their chief duty and concern. They did not appear to have much interest in disease, but only concern for the progress of homœopathy and in medical legislation. After two days of self-glorification, came a practical-appearing paper on "Backache." The essence of the paper and of the subsequent discussion appears to be that backache is due to knots in corset-strings, to "a non-woollen trouser waist-band," to buttons, whalebones, heavy silver watches, etc. In diagnosticating this wonderful disease we are directed thus: "After practising usual crural and abdominal reflexes (!) direct the patient to arch the back and rest on occiput and heels; request the subject to walk in a straight line, eyes shut, and at the same time play an imaginary fiddle. Some special curves disappear on patient 'dressing up' vertically and trying to look square." In the report as to the progress of homœopathy in foreign countries, we are assured that in Germany "the clouds of ignorance are being dissipated by homœopathy." In England the "slow progress" is charged to "British conservatism." "Good news" comes from China, Australia, South America, etc. "In Moscow and St. Petersburg the homœopathic physicians are pulling by far the greater number of silver door-bells." The quack, Count Mattei, upholds the flag in Italy. In America "homœopathy has received its full perfection like the other sciences."

"Insurance Discrimination" was the subject of a report "received with marked interest." Personal letters, written to the presidents of twenty-seven life-insurance companies, as to their discrimination against homœopathic physicians in the choice of examiners, elicited only eleven answers. "Sixteen entirely ignored the request." The few replies are highly amusing. The question is dodged by most of the presidents; one can picture the wicked smiles that probably played about the grim visages of the writers as they dictated their answers. The officer was absent whose duty it was, or who "was competent," to answer the inquiry. Others aver they "never discriminate;" but the lecturer asserted most positively that the companies issue secret orders against the appointment of a homœopathist. Only one company met the question with a manly answer: "We appoint regular physicians because they are the best educated."

In considering "the ethical basis of the separate existence of the homœopathic school," Dr. Crouch contended that the "allopath" has "no more actual science than the Indian medicine man who essays to cure by blowing feathers and beating tom-toms." This slightly extreme judgment was deemed too lenient, and was reinforced by adding that the "allopathic" principle of practice is "not one whit in advance of that of prehistoric man, nor in any way changed except by the unfortunate doctrine of the illustrious GALEN."

At odd, rare intervals a live medical subject was sniffed at, much as a puppy plays with a bumble-bee. One speaker did actually advise the trial of antiseptic methods in puerperal fever. Bacteriology was ogled and snapped at, but at once there was a turning of tail and a ridiculous retreat. The bumble-bee excites curiosity, but is dangerous. "Materia medica day" (*sic*) promised a closer grappling with facts. Alas! we are again floated away on glittering generalities concerning "Civil Government and the Healers of the Sick"—in other words, our States and the general Government must not let the "allopath" have any cherries unless the homœo-

pathic boys are allowed in the same tree. There was one practical subject announced: "A Comparison of Therapeutic Methods based on a Study of Arsenic." "At his own request the speaker was excused from reading it." He was manifestly out of place—possibly, like the young neophyte of Doré's great picture, he was startled at the mediæval mummery and the kind of folk he had got among.

The fourth and fifth days also passed in much vaporous talk about homœopathy instead of about disease, an occasional slight diversion taking place as to hay-fever, appendicitis, etc. A paper on "Orificial Surgery" was noteworthy, and through her representative Philadelphia did not fail to make her voice heard in favor of "the liquor from corned beef and cabbage for cases of cholera infantum in babes as young as ten days." On the sixth day, the glorious subject being still unexhausted, "The Progress of Homœopathy in the World" was again discussed with perfervid rhetoric. But the topic nearest the heart ended all—the everlasting one of *medical legislation.*

Such a sketch as we have given, when read post-mortem, may appear like the caricature of a malignant, partisan enemy, but it is not half so absurd as the more extended report given by the best daily papers. It is strange that such things can happen here, and now. Representatives of what purports to be a great medical school for healing disease come from all parts of the civilized world, and their whole week's work is about their sect, not about disease. In all this great convention not a word is said concerning phthisis, that annually carries off about two thousand of every million inhabitants; not a word uttered by these men showed that they cared that each year, in this country alone, some forty thousand die of diphtheria. Did these "physicians" manifest any concern as to typhoid fever, to which three or four per cent. of all deaths are due? As to diseases of the digestive organs that slay their thousands? As to diseases of the circulatory and nervous systems that slay their tens of thousands? As to diseases of the respiratory system that slay their millions? Should one sit down and enumerate the percentages of deaths from each disease that afflicts humanity, and then foot them all up, it would be found that during these seven days not a paper was read nor a discussion held upon the diseases that cause about ninety-nine per cent. of the deaths of the world. And yet these people can find dupes who think there is either sense or seriousness in such a school of medicine!

However, could aught else be expected of men who almost worship one who took as his distinctive tenets of medical faith the most outrageous absurdities that can be imagined? Take away these travesties of nonsense and nothing is left of Hahnemannianism. What, in brief, simple English, are these articles of the Hahnemannian homœopathic creed?

1. That disease is immaterial, spiritual, its causes not perceptible to the senses, and that no attempt need be made to find them out.

2. That all chronic diseases, except syphilis and sycosis, are due to the itch.

3. That the more you weaken or dilute a drug with water the stronger it becomes, until all that is necessary is simply to smell the most diluted mixture—"even though you have no smeller."

4. That to put out a fire you must add fuel to it—to cure a disease give a medicine that would cause it.

Is it to be wondered at that men who pretend to believe such idiotic drivel call themselves the "new school," when they know that the real new school of medicine, with its instruments of precision, its bacteriological research and its earnest scientific zeal, should long ago have burned as in a garbage furnace *their* very "old school?" It is they only that could find satisfaction and self-excuse in dubbing as "allopathists" those who would as willingly, and could as justly, be called popcornopathists. It is only such who would pretend to practise "dynamization by attenuation," whilst secretly and hypocritically giving "allopathic" doses of "allopathic" drugs.

The moral of it all is, that to indulge in good-humored contempt of these pestiferous doctrines and doctrinaires, to show them mercy, to be indifferent to them, to compromise and play politics with them, is to be poltroon and renegade in the face of one's duty to science and humanity.

THE REPORT OF A MEDICAL EXAMINER FOR LIFE INSURANCE.

THERE are few things that suggest more significant and valuable lessons as to public health, disease, heredity, etc., than the report of a conscientious and skilled medical examiner for a well-managed life insurance company. That such reports may yield the best lessons, the examiner must be one

that does not blindly follow the statistics of others' gathering, nor mechanically carry out old-established rules. For example, to extend the system of averages over areas where diverse conditions prevail hides from view the operations of special causes and conceals the lessons of special prophylaxes. Such dangers are carefully guarded against in the perspicuous summaries of his work made by the medical examiner-in-chief of that well-known organization, the Royal Arcanum. Of 5855 applications submitted to him in 1890 by presumably healthy men, 1302 were rejected. This large proportion of rejections arouses a somewhat startling inquiry as to the general state of physical health of the average American citizen. In a membership of 105,397 the deaths were 925, or a death-rate for the order of 8.77 per thousand. As to the relative death-rates of different States, taking the average of the past five years, we learn that Arkansas was, by a large plurality, the least healthful of all the States, the number of deaths per thousand members of the order having been 20.8. Georgia comes next in order, 13; then Virginia, 11.9; and the District of Columbia, 11.1. The rate of North Carolina was 10.9; Tennessee, 10.6; Maryland, 9.9; Missouri, 8.7; Pennsylvania, 8.6; New York, 8.5; Massachusetts, 8.1; Ohio, 7.8; New Jersey, 7.6; Michigan, 7.5; Indiana, 6.5; Illinois, 6.4; Wisconsin, 6; Rhode Island, 5.4; and Connecticut, 4.9.

The deaths from acute affections of the lungs were this year far in excess of those of previous years, a result undoubtedly due to the pneumonia following influenza. La grippe is charged with at least 87 of the 932 deaths. DR. SEAVERNS divides these deaths into three classes: 1, those occurring from the direct influence of the disease (47); 2, those in which previous disease was aggravated by influenza (20); 3, those in which the person succumbed to other disease for which la grippe prepared the way (20). The mortality was again the greatest in the Southern States. As to the deaths from phthisis, Rhode Island has the place of honor, not a death from this cause occurring among over 1000 members. Wisconsin and Indiana come next with a rate (from phthisis) of only 0.4 per thousand deaths; that of Pennsylvania, Massachusetts and Tennessee being about 1, while Virginia, North Carolina, Michigan and New Jersey have a rate of about 1.8 or 1 9. Notwithstanding the great caution in excluding doubtful risks, it is a somewhat sad commentary on medical prevision to learn that 54 out of the 932 deaths occurred within a year after the entrance examination had been passed. The report is full of interesting facts that we regret we may not recapitulate.

WEEKLY COST OF CARE OF THE INSANE IN AMERICAN ASYLUMS.

FROM the late report of the Committee on Lunacy of Pennsylvania we learn that the per capita weekly expense of maintenance in the principal State Hospitals was (1890) as follows: Harrisburg, $3.81; Danville, $3.31; Norristown, $3.61; Warren, $3.26; Dixmont, $4.31—the average being $3.66. This was for an average aggregate hospital population of 4879. In New York the average cost for 1907 insane in four hospitals was $5.09. In Michigan, three hospitals, 2382 patients, $3.84. In the Government Hospital at Washington, with 1475 inmates, the cost was $4.23. In Wisconsin, the cost was $3.76; in Indiana, $3.96; in Massachusetts, $3.60; in Connecticut, $3.20; in Minnesota, $3.15; in Ohio $3.39; and in Illinois, $2.95. The great lessening in the cost of maintenance is in some cases due to the self-supporting labor done by the chronic insane. It is a strange inhumanity that frequently, and indeed generally, supports thousands of idle people, when their labor rightly and judiciously applied would be a blessing to the one laborer who is supported and to the other outsider who is taxed for the supporting. Let the able ones be put to work.

PREDISPOSITION TO DISEASE IN THE NEGRO.

FROM an analysis of the diseases of 430,466 colored patients treated by the medical department of the Bureau of Refugees from 1865 to 1872, DR. REYBURN, late Surgeon U. S. Volunteers, makes some valuable comparisons as to the alleged predisposition of the African race to certain types of disease. Comparison is made with the diseases (22,053 cases) of white refugees. Among the negroes, there were 152,141 cases of remittent and intermittent fever, and the conclusion is reached that no difference in susceptibility to these fevers exists between the colored and the white people of the Southern States. In like manner the relative statistics disprove the statements commonly made concerning the extreme liability of the colored race to scrofula and pulmonary tuberculosis. The deaths from typhoid fever were 951, or nearly 25 per cent. of

the cases treated, the high mortality being dependent upon the intestinal lesions. The death-rate from diarrhœa and dysentery was also high, which DR. REYBURN ascribes to the ignorance of the colored people of the laws of hygiene and the use of improper articles of food. The colored freedman and the white refugee alike succumbed quickly to epidemic cholera. Under every variety of treatment about one-half of the patients died.

The remarkably small number of cases of delirium tremens among the negroes is charged by DR. REYBURN to "the want of development of the cerebral hemispheres." "Delirium tremens is preëminently a disease causing disorder of intellection, and hence the continued abuse of alcoholic drinks in the negro race is more apt to produce epileptiform convulsions or mania than delirium tremens."

The conclusion is reached that the negro race does not withstand the attacks of acute inflammation, such as pneumonia, nor do they recover from long-continued illnesses, such as typhoid fever, so well as the white race; but, on the other hand, the negro's power of repair after injuries and following surgical operations is believed to be superior to that of the white.

THE HEALTH OF COLLEGE STUDENTS.

FROM statistics kept at Amherst College during the last thirty years it is found that the percentage of illness among seniors has been nearly one-fourth less than among freshmen. It is also shown that from 1861 to 1865 the average yearly loss of time of the students from sickness was 2.18 days, while from 1885 to 1889 the average was about one-fifth less, or 1.75 days. In the first period the deaths were 6.1 per cent. of the number graduating, while from 1885 to 1890 the percentage was only 3.4. These interesting results are traced to the system of physical training and exercise introduced by DR. EDWARD HITCHCOCK, thirty years ago, as a part of the regular curriculum. If the data were to be had it would be an instructive study to compare these statistics with those of other colleges where systematic gymnastics is not compulsory, or where the systems are entirely different in character.

THE INFLUENCE OF SMOKING ON PHYSICAL DEVELOPMENT.

FROM the records of the senior classes of Yale College during the past eight years, the non-smokers are proved to have decidedly gained over the smokers in height, weight and lung-capacity. All candidates for the crews and other athletic sports were non-smokers. The non-smokers were 20 per cent. taller than the smokers, 25 per cent. heavier and had 66 per cent. more lung-capacity. In the graduating class of Amherst College of the present year, those not using tobacco have in weight gained 24 per cent. over those using tobacco, in height 37 per cent., in chest-girth 42 per cent., while they have a greater average lung-capacity by 8.36 cubic inches.

SOCIETY PROCEEDINGS.

THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Meeting of February 20, 1891.

W. W. JAGGARD, M.D, IN THE CHAIR.

DR. HENRY T. BYFORD presented two specimens of fibroid tumors of the uterus removed by operation.

DR. E. C. DUDLEY reported a case of extra-uterine pregnancy which had extended five weeks beyond term and in which the fœtus was dead. Abdominal section, with the removal of the fœtus, was followed by recovery on the part of the mother. The adherent placenta was permitted to remain.

DR. J. H. ETHERIDGE reported two cases in each of which a multiloçular cyst of one ovary by pressure occasioned degenerative changes in the other.

DR. JOHN S. CLARK read a paper entitled

FIFTY YEARS' EXPERIENCE IN OBSTETRICS.

In his experience he had attended, in round numbers, 3500 cases of childbirth. He had never seen a woman die in actual labor and had never left undelivered a case to which he had been called.

During the first fourteen years of practice he had attended 700 cases without encountering a placenta prævia, an arm presentation, or eclampsia; two face presentations were the most troublesome complications. He could only recall three cases in which he had used the forceps. He had had but one death, thirty hours after labor, from uræmic poisoning.

In the next sixteen years he must have had 1500 cases. During this time he encountered his first arm presentation—a midwife's case, who had dallied with it all day—but kind Nature, as she most always does in preternatural presentations, had withheld hard pains, and the turning was easy and quite successful.

Of eight cases of placenta prævia which he had attended, in but two had he delivered living children.

He recalled seven cases of arm presentations; in all turning was easily performed, but the death-rate of the children was high; either three or four died.

In the following twenty years he attended more than 1300 cases, of which a disproportionate number was instrumental. He had never seen a woman die in childbirth. He did, however, have three deaths within twenty-four hours after labor—one at six hours, from exhaustion following a breech presentation; another in a case

of arm-presentation; and a third in a case of tedious labor in which the patient died twenty-four hours after delivery. All three were simply cases of exhaustion. These, together with the case of uræmic poisoning and four other cases—one of which was a most interesting case of pyæmia, in which death occurred thirty-five days after delivery, and that was worthy of a long and full report—are the only cases of death incident to gestation or delivery that he could recall in his whole experience.

Twice he felt compelled to practise perforation—once in a case of frontal presentation, when, for some cause, the forceps would not hold, and a second time in a case of vertex presentation, with the face in the hollow of the sacrum.

He could not recall a single death or a serious injury following a forceps delivery. He soon learned to make early applications, but always gave Nature a good chance.

He had been peculiarly fortunate in regard to hemorrhages after delivery, the life of the patient being endangered in but one case. But once in his entire experience was a patient seized with convulsions during, before, or after labor.

He had two cases of encephalic monsters.

He could recall having seen but two cases of spina bifida.

Earlier in his career he had used anæsthetics in labor much more frequently than now. He fails to see their value in most cases, and only uses them when from any cause the os is very tender and sensitive, or when about to perform a painful obstetrical operation.

He had used ergot quite frequently ever since he began to practise midwifery, at first only in inertia, viz., when pains were feeble; of late years for other purposes, principally for hemorrhages. In but a single case had he seen harm result from its use.

He had delivered a few times from above the superior strait.

It is astonishing how long a time, occasionally, will elapse, after the death of the fœtus, before it is cast off. Dr. Clark had a case in which three months elapsed between the death of the fœtus and its expulsion. In case of abortion hemorrhage is easily controlled by a well-fitting tampon; no harm results from its use. If the ovum has been retained for a long time and hemorrhages occur, an effort should be made to remove the ovum; for, the ovum once turned out, the bleeding ceases. He had known the ovum to be retained for twenty-eight days, and finally discharged with very little show, perfectly inodorous and unchanged. If decomposition takes place, the discharges offensive, the os open and the cavity of the womb easily reached, the ovum should be removed; but if the external os is tightly closed he would hesitate to invade the sanctuary on which Nature has written, "No admittance." Having seen a large number of cases of retained decomposing ova which came away or were absorbed without harm to the patient, he had little fear as to the result.

Address Wanted.—Will Dr. W. Clark, who sent a communication to THE MEDICAL NEWS, kindly send us his address?

CORRESPONDENCE.

CHANGES RELATIVE TO MEDICAL STUDENTS IN THE NORTHWESTERN UNIVERSITY.

To the Editor of THE MEDICAL NEWS,

SIR: Under the presidency of Henry Wade Rogers, LL.D., many changes are being made in the arrangement of work and in the management of the Northwestern University. Some of these are of enough interest to physicians to warrant the use of a little space in professional journals.

In the College of Literature a course has been arranged especially for those intending to study medicine. Since the spring catalogue was issued several changes have been made in this course and more are promised. It consists in a thorough course in organic and inorganic chemistry, mechanics, heat, sound, light, electricity, mathematics, German, French, psychology, logic, rhetoric, botany, biology, bacteriology, geology, zoölogy, and osteology. The biological work is in charge of Prof. Chas. B. Atwell, Ph.M., a graduate of Syracuse University. He is an enthusiastic student himself and he has the reputation of inspiring his scholars. He is spending his summer vacation with the German masters. His methods are such as to make the use of text-books secondary and incidental. This course is the result of a gradual evolution, but as a distinct course it was established last year.

From its foundation the Medical Department of the University has been known as the Chicago Medical College; the law school has been called the Union College of Law; the school of pharmacy has been the Illinois College of Pharmacy, etc. In the future these various titles will be dropped and the schools will be known simply as the Northwestern University Medical College, Dental College, School of Pharmacy and College of Law.

The Woman's Medical College has heretofore had an independent existence. Negotiations are now being completed to make this school also a department of the Northwestern University and to be known as the Northwestern University Woman's Medical College. It will remain as distinct from the old medical school as from the law school.

The courses in the medical schools have been lengthened to four years, but the preparatory course in the Literary College may apply as one year in the medical schools.

A University Council has been organized, consisting of the President of the University and the dean and one member of the faculty of each school. To this council are referred matters of mutual interest to the different colleges.

A fund of $150,000 is being raised to endow three chairs in the medical college. A new laboratory building is being erected in Chicago for the departments of medicine, pharmacy and dentistry.

A school of technology is not far distant in the future, since $150,000 has already been secured for that purpose.

For many years the school of medicine has encouraged its students to take a thorough preparatory course by

offering free lecture fees to those who have finished the studies of the freshman and sophomore years in the College of Literature, or the special course for medical students in the same college.

During the year fifty-two scholarships in the College of Literature have been established, corresponding with the number of State Senators in Illinois. To each State Senator is given the privilege of sending one student upon such scholarships.

Since a large proportion of the colleges of the University are in Chicago, it was ordered at the recent trustee meeting that the word "Evanston" be taken from the seal. In the future, in the place of independent commencements for the different schools there will be one commencement held, probably in the Auditorium, Chicago.

The Chicago Medical College was the first medical school in the country to adopt a graded course. In the past her classes have not been so large as those of some other schools, but the character of her work has been second to none, in the West at least. With the additional hospital advantages which the new Wesleyan Hospital will furnish, there is no reason why the Northwestern University Medical Colleges should not continue to do good work. Respectfully, H. B. H.

EVANSTON, ILL., JUNE 29, 1891.

CHICAGO.

DR. JOHN H. RAUCH'S resignation as Secretary of the State Board of Health of Illinois was tendered and accepted at the meeting of the board held in this city on June 30th. The letter of resignation was as follows:

W. A. HASKELL, M.D., President Illinois State Board of Health—Doctor: I beg to tender my resignation of the office of Secretary to which I was reëlected at the last meeting. While I must stipulate that this resignation shall take effect as of this date, I do not wish to embarrass the board in any manner and shall be happy to furnish the fullest information concerning the complicated details of the Secretary's office and to discharge without compensation any of its duties that the board may indicate for a reasonable period. Accept for yourself personally and convey to the other members of the board my thanks for the uniform courtesy and generous support which has been accorded me, since the first organization of the board in 1877, as your President and Secretary. Yours very truly,

JOHN H. RAUCH.

After reading the communication to the board, President Haskell said he presumed the members were sufficiently aware of the circumstances which had led Dr. Rauch to take this action. He would, therefore, refrain from any expression of opinion, but he desired to pay a tribute to the services which Dr. Rauch had rendered to the medical profession, to the cause of sanitary science, and to the lives of the citizens not only of Illinois, but also of the country at large, for nearly half a century. His name was known and honored on both sides of the Atlantic. Through his untiring energy, devotion to lofty ideals, and unhesitating self-sacrifice the board had come to be recognized as the most important factor in all questions of medical education, public sanitation, and the interests of the entire nation. He would not for the present express what he felt sure were the sentiments of his colleagues, but advised the board in accepting the resignation to appoint a committee to prepare an adequate expression of the high appreciation and esteem in which Dr. Rauch was held by the members and of their regret at his resignation.

A committee, consisting of Drs. Newton, Bateman, Clark and Ludlow, was then appointed, with instructions to publish its report before the next meeting of the board.

The quarterly report of the Secretary stated that the public health had been unusually good, contagious diseases having been rare.

It was decided to revoke all licenses of physicians convicted of malpractice. Charges having been brought against Dr. S. E. McCreary, of Peoria, for unprofessional and dishonest conduct, he was summoned to appear before the board to show cause why his certificate should not be revoked. He appeared by attorney, asked further time, and the case was postponed until the next meeting.

A petition was received from the Indiana Eclectic Medical College asking that their diplomas issued prior to May 15, 1890, be recognized. The petition was granted.

Dr. A. L. Clark was appointed to represent the board at the International Congress of Hygiene and Demography to be held in London next August.

NEWS ITEMS.

Washington State Board of Health.—The first Board of Health and Bureau of Vital Statistics in the new State of Washington, composed of five members appointed by the Governor in compliance with an Act of the Legislature approved March 7, 1891, was organized June 8, 1891.

The Cincinnati Lancet-Clinic.—The editorial chair of the Cincinnati *Lancet-Clinic*, made vacant by the transfer of Dr. Culbertson to the *Journal of the American Medical Association*, has been filled by the selection of Dr. A. B. Richardson—Dr. J. C. Oliver and Dr. L. S. Colter being associate editors.

The School of Medicine of the University of Texas —At a meeting of the Regents held last week at Austin, steps were taken to put the medical branch into operation next October. It was determined to arrange for eight chairs, with salaries affixed as follows: Three at $3000 each, viz., physiology, chemistry and surgery; four at $2500 each, viz., anatomy, materia medica, obstetrics and gynecology, and practice of medicine; one at $2000, viz., pathology and bacteriology. But two of the above were filled. Dr. H. A. West, of Galveston, was elected to fill the chair of Practice of Medicine; and Dr. J. F. Y. Paine, of Galveston, the chair of Obstetrics and Gynecology. The board also determined to have a three years' graded course, a session of seven months, and to require an entrance examination.

The medical branch of the University is located at Galveston. The State has nearly completed a handsome building at a cost of $70,000. Upon the block adjoining

is the Sealy Hospital, the gift to the State of Mrs. John Sealy. This hospital is a fine building. Its clinical material is controlled by the college faculty. Funds were appropriated for the equipment of the various laboratories. These facts are mentioned for the information of those who may seek the vacant chairs. An election to fill these vacancies will take place in Galveston the latter part of August next. For further information and details applicants may address Dr. Thos. D. Wooten, President of the Board of Regents, Austin, Texas; or Dr. T. C. Thompson, Galveston, Texas.

Ohio State Medical Society.—The Ohio State Medical Society held its forty-second annual session at Sandusky, June 18, 19 and 20, 1891. Dr. W. J. Conklin, of Dayton, presided, and Dr. G. A. Collamore, of Toledo, acted as Secretary.

The President read an address on Molière and the Doctors. Dr. H. J. Herrick, of Cleveland, read a paper on Carcinoma a Form of Perverted Nutrition. Dr. J. C. Reeve, of Dayton, read a paper upon the A. C. E. Mixture. Dr. A. R. Baker, of Cleveland, read a paper on Some Facts Every Practitioner Should Know About Squint.

Dr. G. A. Collamore, of Toledo, was elected President, and Dr. Fitzpatrick, of Cincinnati, Secretary for the ensuing year. The next meeting will be held at Cincinnati in May, 1892.

Congress of American Physicians and Surgeons.—The second triennial session of the Congress of American Physicians and Surgeons will be held at Washington, D. C., September 23, 24 and 25, 1891.

A number of distinguished foreign physicians and surgeons have accepted invitations to attend the session, among them Mr. Thomas Bryant, Mr. B. E. Broadhurst, Mr. A. E. Durham, Mr. Reginald Harrison, Surgeon-General W. E. McKennin, Mr. U. Pritchard, Mr. F. Treves, Sir William MacCormac, Dr. James G. Glover and Dr. William M. Ord, of London, England; Dr. McCall Anderson and Dr. W. T. Gairdner, of Glasgow; Mr. E. H. Bennett and Professor J. J. Cunningham, of Dublin; Professor John Chiene and Dr. J. Battey Tuke, of Edinburgh; Professor H. Krause and Dr. F. Beeby, of Berlin; Professor Curschmann, of Leipzig; Professor Hoffa, of Wurzburg; Professor Kühne, of Heidelberg; M. Emil Juval, M. E. Landolt and Dr. Pozzi, of Paris; Dr. A. Musso, of Turin; Dr. Von Mozengeil, of Bonn; Dr. Löwenber, of Paris; and Dr. Rafail Lavista, of Mexico.

The sessions of the Congress will be held in the Main Hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, from 3 to 6 P.M., daily.

The President's Address will be delivered in the Lecture Hall of the National Museum, Wednesday, September 23d, at 8 P.M.; it will be followed from 9.30 until 12 by the reception of the President. The Army Medical Museum will be open during the evening.

Medical Legislation in the State of Washington.—By an Act of the Legislature, approved April 10, 1890, the State of Washington has a Medical Examining Board, consisting of nine members, "learned and skilled in the practice and theory of medicine and surgery," appointed by the Governor for the terms of three years each. Examinations are held in January and July, alternately in the eastern and western parts of the State, and at such other times as may seem necessary. Applicants for licenses to practise are examined in anatomy, physiology, chemistry, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence and such other branches as the board shall deem advisable. The consent of five members is necessary for the granting of a license. The examination fee is $10. The board is empowered to refuse or revoke a license for unprofessional or dishonorable conduct, subject to the right of appeal. The words "unprofessional or dishonorable conduct" are used to mean: First, the procuring, or aiding or abetting in procuring, a criminal abortion; second, the employing of what are popularly known as "cappers" or "steerers;" third, the obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured; fourth, the wilful betrayal of a professional secret; fifth, all advertising of medical business in which untruthful and improbable statements are made; sixth, all advertising of any medicines or of any means whereby the monthly periods of women can be regulated, or the menses reëstablished if suppressed; seventh, conviction of any offence involving moral turpitude; eighth, habitual intemperance.

Infringement of the Act is punishable by a fine of from $50 to $100 and imprisonment of from ten to ninety days.

Indiana State Medical Society.—The forty-second annual session of the Indiana State Medical Society was held at Indianapolis, June 10th and 11th. The Alumni of the Medical College of Indiana celebrated the twenty-first anniversary of its organization by a banquet.

Dr. Theodore Potter presented an interesting report on Bacteriological Investigations. Dr. J. W. Milligan, of Indianapolis, read a paper on Antiseptic Methods Applied to Obstetrics. Dr. C. C. Morris, of Rockville, read a paper on The Salicylic Treatment of Typhoid Fever. Dr. J. A. Sutcliffe, of Indianapolis, presented an interesting paper on Perineal Section, with a number of illustrative cases. Following this Dr. C. H. Smith, of Lebanon, discussed the subject of Abortion. Dr. Owen read a paper on What Should be the Relation of Contract Corporation-Surgeons to the Medical Profession? The subject was referred to a committee consisting of Drs. Owen, Hibberd and Sutcliffe, with instruction to report before the close of the meeting. Dr. M. F. Porter, of Fort Wayne, read the Report of a Case of Sarcoma of the Ovary; Operation and Recovery. After this came a paper by Dr. F. C. Ferguson, of Indianapolis, on Some Fallacies in Gynecology. The subject of Diphtheria was treated by Dr. W. A. McCoy, of Madison. The venerable Dr. Lomax stated that he had encountered the term diphtherite in the beginning of his practice, fifty-four years ago, and the disease soon after; hence it was not, as sometimes supposed, a product of modern civilization. The address of the President, Dr. Gonzalva C. Smythe, of Greencastle, on The Influence of Heredity in Producing Disease and Degeneracy, and Its Remedies,

was an able one. Dr. A. B. Richardson, of Cincinnati, read a paper on Hysteria.

Dr. A. W. Brayton, of Indianapolis, presented a girl, fourteen years old, afflicted with the extremely rare disease of the skin known as xeroderma pigmentosum, or Kaposi's disease. This is the only case known to have been observed in the Mississippi Valley and the eleventh in the United States. Dr. G. W. McCuskey read a paper on Some Needed Medical Legislation. Following this came a paper by Dr. S. M. Voris, of Columbus, on Lacerations of the Perineum, and one by Dr. G. W. Vernon, of Indianapolis, on Vulvo-vaginitis in Children. Papers were read by Dr. F. C. Woodburn, of Indianapolis, on Valvular Heart Diseases; by Dr. S. C. Evans, of Union City, on Nasal and Naso-pharyngeal Reflexes; by Dr. H. McCullough, of Fort Wayne, on Functional Aphonia; by Dr. C. L. Thomas, of Logansport, on Cataract, With or Without Iridectomy; by Dr. Norman Teal, of Kendallville, on Health and Vital Statistics; by Dr. S. W. Gould, of Argos, on Opium and its Preparations; by Dr. M. F. Johnston, of Richmond, on Angina Pectoris.

The following officers were elected for the ensuing year: President, Dr. Edwin Walker, of Evansville; Vice-President, Dr. Erwin Wright, of Huntingdon; Secretary, Dr. I. I. Elder, of Indianapolis; Assistant Secretary, Dr. T. A. Kennedy, of Shelbyville; Treasurer, Dr. J. O. Stiltson, of Indianapolis. The next meeting will be held on the second Thursday of May, 1892.

Sir Prescott Hewitt, the distinguished English surgeon, died recently aged seventy-seven years.

Scanzoni, the distinguished obstetrician and gynecologist, died recently aged seventy years. He succeeded Kievisch as professor of obstetrics at Würzburg, a position that he occupied for thirty-seven years. He was the author of numerous important works in obstetrics and gynecology.

The Mitchell District Medical Society will hold its annual meeting at West Baden Springs, Indiana, July 16 and 17, 1891. A long list of scientific papers will be presented. Dr. A. M. Owens, of Evansville, is the president; Dr. H. W. Shirley, of Shoals, the vice-president; and Dr. George W. Burton, of Mitchell, the secretary of the Society.

Work of the U. S. Army and Navy Medical Examining Boards.—Through the courtesy of the Surgeon-Generals of the Army and Navy I am able to give you the following results of the work of their Examining Boards for the last ten years:

Before the Army Boards 384 candidates presented themselves during this period, of whom 76, or 22.3 per cent., were approved and passed, 31 were rejected for physical disqualifications, 90 failed to pass the preliminary examination and the remainder failed to pass the medical examination. The rejections for physical defects are for the last three years only.

Before the Navy Boards 237 candidates presented themselves, of whom 55, or 23.1 per cent., were approved and passed, 75 were rejected for physical disqualifications, and the remainder either withdrew or failed to pass.

Evidently the standards of the two boards are about the same. The proportion of those rejected for physical defects is noteworthy. In a general way we may say that about one-fourth of the candidates before such boards are approved, and one-fourth fail on the preliminary examination as to general education. Putting aside those rejected for physical causes, and making the necessary corrections for a certain number who came before the boards more than once, we find that of 429 examined, 129, or 30.2 per cent., were successful.

Of those candidates who had a college degree 34 per cent. succeeded, and of those who had no such degree, 28.9 succeeded. Of those candidates who had had one year's residence in a hospital, 40 per cent. passed, while of those who had not been residents, only 21 per cent. were successful. The percentage of successful candidates from different schools varies greatly, ranging from 9 to 56 per cent. for those schools from which more than ten candidates presented themselves. I cannot go into details on this point, but may say that taking the Medical Schools of Harvard, Yale, the College of Physicians, and Bellevue Hospital of New York, the University of Pennsylvania, and the University of Virginia, together, of 141 candidates, 65, or 46.1 per cent., succeeded, while for all the rest of the schools in a body, of 586 candidates, 64, or 22.3 per cent., succeeded.—DR. JOHN S. BILLINGS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 30 TO JULY 6, 1891.

BUELL, JAMES W., *Assistant Surgeon.*—Is retired from active service, by reason of disability incident to the service.

OWEN, WILLIAM S., JR., *Assistant Surgeon.*—Is detailed to attend the encampment of the Illinois National Guard, near Springfield, Ill., from July 18th to 25th, and August 11 to 18, 1891.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING JUNE 27, 1891.

HAMILTON, J. B., *Surgeon.*—Ordered to Washington, D. C., on special duty, June 9, 1891.

GEDDINGS, H. D., *Assistant Surgeon.*—Ordered to New York, N. Y., on special duty, June 13, 1891. Ordered to Washington, D. C., on special duty, June 26, 1891.

WERTENBAKER, C. P., *Assistant Surgeon.*—When relieved at Galveston, Texas, to proceed to Chicago, Ill., for duty, June 23, 1891.

SMITH, A. C., *Assistant Surgeon.*—Relieved from duty at New Orleans, La.; ordered to Galveston, Texas, June 23, 1891.

STIMPSON, W. G., *Assistant Surgeon.*—Ordered to New York, N. Y., for temporary duty, June 12, 1891.

ROSENAU, M. J., *Assistant Surgeon.*—When relieved at Chicago, Ill., to proceed to New Orleans, La., for duty, June 23, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA.

THE MEDICAL NEWS.

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VOL. LIX. SATURDAY, JULY 18, 1891. No. 3.

ORIGINAL ARTICLES.

PHILOSOPHY AND HOMŒOPATHY.

BY SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS, PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE PHILADELPHIA HOSPITAL, ETC.

IN a volume of essays[1] submitted by the Editor of THE MEDICAL NEWS to the writer for review, the professor of materia medica and therapeutics in the Homœopathic Medical College of the University of Michigan has endeavored, among other things, logically to establish upon *à priori* grounds the validity of the so-called "homœopathic law of cure." The author seems to be a thoughtful writer, and his essays have the merit of perspicuity, so far as the essentially imperspicuous nature of his case allows. He is evidently firmly convinced that truth is with him. He frankly confesses wherein the practice of the so-called homœopathist of to-day departs from the principles laid down by Hahnemann. His tone is temperate and his style is scholarly.

For these reasons a more extended examination of a few of the arguments and illustrations brought forward in this series of papers than would fall within the limits of the ordinary book-notice, will not be unprofitable.

The subject of what is and what is not homœopathy might perhaps be left to the followers of Hahnemann, true and false, as a matter of no concern to those whose time and thought are devoted to the investigation of the problems of the causes and processes of disease, and the discovery of means wherewith to promote or restore health. Unfortunately, however, opponents of legislation which shall debar the unscrupulous and incompetent from disgracing the ranks of the medical profession, have brought the status of homœopathy prominently forward as a disturbing element.[2]

In discussions thus provoked, so many reckless assertions have been made by apologists for homœopathy, both in its own ranks and in the ranks of the profession of medicine, that a candid and straightforward statement, such as is made by Professor Mack, becomes of inestimable value in clearing the ground of discussion from a tangled overgrowth of false issues. In an essay read before the Philadelphia County Medical Society the writer of this review offered certain propositions concerning the nature and scope of homœopathy, which have been vigorously denied by homœopathic critics; one of whom went so far as to bring a charge of misquotation, but without making any attempt to substantiate that charge. In the logical papers of Prof. Mack, we find exactly the same views of homœopathy as those set forth in the paper referred to.[1]

The writer's propositions were as follows:

1. Homœopathy is exclusively a system of drug-therapeutics.

2. It is an exclusive system, arbitrarily devised, inflexible and claiming infallibility.

3. It expressly prohibits the endeavor to interpret morbid symptoms as indications of changes in the structure or functional activity of definite tissues and organs . . . and fixes attention upon the symptoms alone, independently of their origin, as constituting the whole of the disease and affording the sole indication for treatment.

4. The doctrine of homœopathia is inextricably bound up with the practice of infinitesimal dosage.

Concerning the subject-matter of the fourth proposition, Prof. Mack has nothing to say; indeed, he expressly avoids the question; so that it may be left out of consideration in the present paper.

Let us see, however, what he has to say concerning our first proposition, that *homœopathy is exclusively a system of drug-therapeutics*. In an essay

[1] Philosophy of Homœopathy. Charles S. Mack, M.D. 8vo., pp. 174. Chicago: Gross & Dellbridge, 1890.

[2] The writer, in common with those physicians of Pennsylvania who have supported the proposed bill to create the "Board of Medical Examiners and Licensers," would heartily favor any honorable means whereby the best men in the homœopathic ranks could be united with the best men in the ranks of the so-called "regular" physicians in furtherance of this wholesome legislation. Our aim is to protect the community from charlatans and pretenders, "regular" or "irregular," and not to war against theories or methods of practice. These latter are proper subjects for discussion, but not for legislation. State examinations could be held in the fundamental sciences, and not upon the arts of medicine; upon anatomy (normal and morbid), physiology, chemistry, toxicology and certain admitted principles of hygiene, surgery, and obstetrics, but not upon therapeutics or the practice of medicine. Thus the entire question of "schools" or "sects" could be avoided without injustice on the one hand or compromise of principle upon the other.

[1] Proceedings of the Philadelphia County Medical Society, vol. ix. p. 278 et seq.; THE MEDICAL NEWS, Oct. 19, 1889, p. 427 et seq.

entitled "Homœopathy: the Only System of Curative Medicine," the author draws a distinction between *cure* of patients and their *recovery*, and a parallel distinction between *homœopathic treatment* and *useful non-homœopathic treatment*. He distinctly states that measures of prophylaxis and of palliation, hygienic measures and the administration of antidotes, of parasiticides, etc., are *not homœopathic*, though they may lead to the recovery of the patient.

A patient who has recovered after the cause of his disease has been removed, is not, however, cured. Cure of a patient, according to our author, is something entirely apart from the use or effect of remedial measures having reference either to the cause of the disease or to the pathological processes, structural or functional, resulting from the operation of that cause. "By *cure*," he says, "we mean such modification of the quality of vital processes and their effects that whereas these processes and effects were abnormal they shall become normal, and this as the *direct* result (not an indirect) of the medicine used. A drug can be curative only by reason of its dynamic effects upon the patient. Curative treatment is invariably a treatment of the *patient*, and never a direct attack upon the cause of disease." Again, he says: "We have recognized the propriety of avoiding proximate causes of disease; to avoid them is hygienic. We have also recognized the propriety of directly attacking, and destroying, and removing such causes when they exist upon or in the body, by any means not harmful to the patient; this is prophylactic. These hygienic and prophylactic measures are *aside from the subject of homœopathy*, and, as we have seen, are not curative." And again: "The two sets of facts between which a law of cure must define the relation are, on the one hand, unmodified disease-effects, subjective or objective; and, on the other hand, unmodified dynamic drug-effects, subjective or objective." And again: "We may say, moreover, that curative treatment is invariably the treatment of a patient with a drug (or drugs) indicated by the symptoms which he exhibits."

These citations clearly exhibit many things, to some of which we may return hereafter. For the present it will be sufficient to note the claim that homœopathic treatment and curative treatment are identical; and the explicit statements (*a*) that treatment directed against the causes of disease is not curative, and therefore *not homœopathic*, and (*b*) that the *only curative* or homœopathic treatment is the giving of "*a drug or drugs* indicated by the *symptoms* of the patient." This claim and these statements entirely bear out our first proposition, and partially bear out our second and third propositions.

In another essay entitled, "Is Homœopathy Exclusive?"—which may be considered in connection with our second proposition (*i. e.*, that homœopathy *is* exclusive)—the author affirms his willingness to help his patient to recover by "useful, non-curative treatment," but again distinctly asserts that such treatment is not homœopathic. "The explanation of any apparent inconsistency here," he says, "would be arrived at by accurately defining the word *cure*. Having thus defined *cure* we should, I think, be in a position to maintain that no treatment not homœopathic can be curative—*that, as a system of curative medicine, homœopathy is exclusive;* but it does not follow that there may not be indefinitely many principles (concerning which *similia* says nothing) upon which useful, though not curative treatment, can be based." Again, he says: "We have now, by exclusion, demonstrated that *no possible law of cure can exist* excepting that which defines *similarity between unmodified disease-effects and unmodified dynamic drug-effects* as the criterion by which we can know that a drug is curative. We are thus obliged either to fix our belief in *similia* as the law, and *the only possible law of cure*, or, as regards curative medicine, to take up with that most dismal belief which has come to be known as medical nihilism."

Surely no stronger statement of the claims of homœopathy as an exclusive system could be made. And, again, it will be noticed that drug-giving is not only tacitly assumed, but is expressly stated as the one method of homœopathic treatment—the only method of cure.

Let us now consider some of Prof. Mack's statements in relation with our third proposition, concerning the ends sought to be achieved by drug-giving in accordance with the homœopathic principle. We have already seen that homœopathic treatment, as such, does not aim at the removal of the causes of disease. This, our author states, is prophylaxis and not cure; while homœopathy has only to do with cure. It does not aim to combat the effects of pathological processes, or to antidote poisons, or to remove from the blood toxic products, the result of disease. These measures, says Prof. Mack, as plainly as language can say anything, may be useful; they permit the patient to recover; but to permit a patient to recover, or to be useful, is not the object of homœopathy.

Thus, the administration of stimulants to carry a patient over some critical period is useful but not curative, and therefore it is not homœopathic (p. 37). And here is an illustration which we cannot do better than to quote exactly in the words of the candid writer. In speaking of the use of atropine to avert the danger of adhesion between the iris and the lens in cases of inflammation of either of these structures, he says: "This certainly is not homœopathic, equally certainly it is

not curative; to modify in any way the inflammatory process is not the direct object of such treatment; the object of such treatment is simply prophylactic." Again, he says: "Never admit into either of those two distinct sets of phenomena (disease-effects and drug-effects) between which you institute a comparison in your search for a curative medicine—never admit into either of these sets of phenomena an hypothesis as to how a particular effect has been produced." The full significance of this extraordinary teaching must be reserved for discussion further on. For the present it is enough to note that it bears out the proposition that homœopathy forbids the attempt to produce by our remedial measures definite effects upon definite structures or functions. This is still more evident when we read again: "If B is cured of syphilis by the use of mercury it is not because A was cured of syphilis by the use of that drug. Each is cured because mercury is capable of producing effects similar to those produced by syphilis in him." Given a patient, then, with syphilis and without symptoms similar to those occasioned by the use of mercury, he could not be homœopathically treated with mercury; or given a patient with syphilis, and without symptoms similar to those produced by the use of potassium iodide, he could not be homœopathically treated with the latter drug; because homœopathic treatment is not directed against the cause of the disease, or against pathological processes or their effects, but is solely based upon symptoms manifested in the individual patient, without reference either to the cause of the symptoms or to the pathological conditions which they denote.

Such being Professor Mack's exposition of homœopathy, we wonderingly ask how a thoughtful man can put his faith in such a system, and even come before the world as its champion on the ground of its philosophic truth. The answer must be found in that tendency to mysticism which is often associated with the highest qualities of intellect. From some allusions in the medical essays, and from other essays found in the same volume, we judge that the author is a member of a certain sect of mystics. It would be grossly improper, of course, to discuss or debate his faith—and we ignore altogether in our critique of his position some remarkable theories of analogy between disease and sin, homœopathy and confession, and so forth—but we may evidence these matters as an illustration of the psychological tendencies leading to what we consider his fundamental error in the conception of life and its processes. He assumes that vital activities and their perversions are not to be considered in relation with the general laws of energy; but that a mysterious something to which he gives no definite name, but which, for all intents and purposes, is the same as the "vital principle" of the ancients, is the governing power in such processes. Thus, disease becomes to him, as to Hahnemann, a derangement of this immaterial vital principle, and not a disturbance of function or alteration of structure in the material body. Thus, to him, as to Hahnemann, the causes of disease are essentially unknowable, and treatment directed against those causes unphilosophic. This position naturally leads our author, as it led Hahnemann, into some direct contradictions, as will be seen from the remarks upon "useful treatment" and "proximate causes," which we have quoted; but he evades the full force of this contradiction by his candid admission that "useful prophylactic treatment"—under which head he includes all measures directed against morbific agents or agencies—is not homœopathic.

The ethical question here involved, to our mind of highest importance, the author entirely overlooks. Patients consult a physician in order to be restored to health as quickly and as completely as possible. As a rule, they have no knowledge of medical history or of medical doctrines; and rarely are they acquainted with even the elements of the sciences upon which medical practice is based. They go to this man or that woman because of reputation, or because of supposed adherence to a certain "school;" but they draw no distinction between "cure" and "recovery," between "useful" and "curative" treatment. When one recovers, he says he has been cured; and he attributes the alleged cure to homœopathy, if the practitioner in attendance is professedly a homœopathist. Yet that practitioner, as shown by Professor Mack, may not have treated the patient homœopathically in any particular. To undeceive the patient, saying "You have not been cured, but have recovered; and your recovery is not the result of homœopathic treatment, but of useful treatment," would be eminently honest—but it is an unheard-of event. On the other hand, is it not dishonest to allow the patient to imagine himself "cured" by homœopathy, when in reality he has recovered under useful, *i. e.*, sensible, treatment? Professor Mack has himself laid the foundation for this question. It must be answered, and it can have but one answer.

This, however, is a digression. There is still another most unphilosophical doctrine affirmed in the name of philosophy in the essays under review, which demands attention. It is logically the only basis upon which homœopathy can rest. That it is an insecure basis will be self-evident. The author elaborately affirms that experience weighs neither in favor of nor against the fundamental principle of homœopathy, *similia similibus curantur*. That principle is held to be proved "by exclusion" to be the "only possible law of cure," and if theory

does not agree with facts, "so much the worse for facts."

True, this most astounding teaching is nowhere set forth in so many words as a terse and citable proposition; but it permeates the book. The author avowedly sets out to discover by *à priori* reasoning a "law of cure;" his reasoning is professedly abstract throughout, and nowhere in his studies does he appeal to the lessons of experience for confirmation of his assertions. Moreover he says, apparently unconscious of the contradictions involved: "Statistics regarding results in homœopathic practice may afford *evidence* of the truth of *similia*, but should never constitute our *reason* for the choice of a remedy as homœopathic in a case under treatment. The *reason* for this choice should always be that the medicine chosen is capable of producing unmodified dynamic effects similar to the disease-effects manifested in our patient." What kind of "reason" that may be, which is independent of evidence, we cannot imagine. Again we read: "To base practice simply on evidence is empiricism." In other words, the results of treatment are to have no bearing upon the selection of remedies.

Still more plainly is this strange doctrine found in the following: "History says that Hahnemann's first suspicion that *similia* is the law of cure was an induction from the premises—that cinchona cures malarial patients, and that the effects producible by cinchona are similar to those producible by malaria. *It need not shake our belief in homœopathy to discredit these premises.*" Indeed, one cannot attentively read the various essays in this volume without becoming convinced that the author would believe in and teach homœopathy—we do not say practise it—though he had never thought that he had cured a patient by it; though he had never heard of anyone else having done so. He would say: "The law is true, our application of it defective."

Professor Mack, we believe, fails to grasp the meaning of the term "law" as applied to the processes of nature. A law (fundamental principle) of nature, as expressed by men, is simply a terse generalization—an induction—founded upon a multitude of observed facts. It is the briefest expression which will include a certain group of relations learned by experience. It has nothing in common with the law (statute) which is made by parliaments, autocrats, or mobs. A law of men may be disobeyed; may fall into desuetude; may be repealed. A law of nature is not related with the possibility of neglect or disobedience; and, flowing as it does from the eternal constitution of things, is eternal as the Maker of all things.

The only means by which man can arrive at a knowledge of natural laws is by observing their operations. It was by such observation that Newton was led to the profound generalization which we know as the "law of gravitation." He tested the truth of his hypothesis by comparing it with the facts of experience; and it was not until the revised measurement of the terrestrial meridian had enabled him to revise his calculations and prove the correspondence of fact with theory, that this true philosopher announced to the world that the falling moon obeyed the same law as the falling apple.

But small need be our wonder that our author decries observation and experience. Observation and experience, continually accumulating, show the fallacy of homœopathy, even as an occasional empirical guide in practice, to say nothing of its claim to be a universal and exclusive system of cure. Though Professor Mack says it is "without flaw," he himself demonstrates its inadequacy in the confession that it must be supplemented with prophylactic, palliative, antidotal, and other useful measures. Though he lauds it as the only reasonable system, he himself exposes its foundation upon unreason in the warning to students not to attempt to discover in their investigation of the powers of therapeutic agents "how a particular effect is produced."

That the intellect often forges for itself heavy fetters of theory is well known; and yet one is tempted to inquire why an author, who so clearly shows that *useful treatment is not homœopathic*, did not go one step further, and learn that *homœopathic treatment is not useful.*

WHAT TO DO FOR INCIPIENT CATARACT.[1]

BY EDWARD JACKSON, M.D.,

PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC; SURGEON TO WILLS EYE HOSPITAL, ETC.

I CLOSED a paper on the "Diagnosis of Incipient Cataract," read before this Society in 1885 and published in the *Transactions* of that year, with these words: "Many interesting questions arise with reference to the etiology, prognosis, and management of growing cataract. But their profitable consideration and elucidation wait upon accurate and complete diagnosis—diagnosis in the broad philosophical sense, that rests not on naming a morbid condition present, but which, through due consideration of all possible pathological factors, traces the connection of symptoms to their cause." The present paper is in direct continuance of the line of thought then taken up.

The first thing to be done in any case of cataract is to complete the diagnosis by a careful study of all the evidences of departure from ocular or general health; for "it may be assumed, as a rule, that

[1] Read before the Medical Society of the State of Pennsylvania, June 4, 1891.

when the lens, by its opacity, gives evidence of impaired nutrition, it does not suffer alone. And that when cataract is noticed, instead of accepting it as the cause and explanation of all existing symptoms, we should be aroused to new diligence in the search for deeper and probably more important lesions." Not only are concomitant lesions to be sought or excluded, but I believe that we are now in position to learn something, perhaps much, with reference to the causation of cataract; such knowledge will enable us to render our patients material benefit in preventing the occurrence or advance of the condition, and in certain forms of opacity we may even be able to secure some improvement in the transparency of the lens.

From habitually speaking of certain forms of cataract as "senile," we have come too commonly to regard them as simply a result of the necessary and unavoidable change brought about by age, in the same sense that the loss of accommodation or the whitening of the hair is a senile change. Such a view, however, is not in accordance with the facts. Cataract is not confined or nearly confined to the oldest persons. While I am not prepared to give statistics on the subject, my impression is that opacity of the lens commences no more frequently and progresses less rapidly after the age of sixty than between the ages of forty-five and sixty. Moreover, a large proportion, probably a majority, of those who live to extreme old age, remains free from any opacity whatever of the crystalline lens. Even when cataract develops, it is usually not regularly progressive; in a very large number of cases it becomes stationary and remains so throughout life. Many such cases have been reported. In the *Royal London Ophthalmic Hospital Reports* for 1867 is recorded one that is of especial interest, because a drawing of the original condition had been made by William Bowman, and after eighteen years there was no material change in the degree of opacity. I well remember a case, seen in the service of Dr. George C. Harlan, in which we agreed that the appearance of the opacity indicated its probably rapid increase. The patient received this opinion very quietly, and explained her complacency by stating that she had been told the same thing six years before, while her sight had not grown worse since then. Of ten patients seen by me over ten years ago, whose histories I have been able to follow to the present time or until the death of the patient, in but one has the lens been extracted, and in but one other was there a mature cataract. Six died with cataracts still immature and two are still living, or were a few months ago, without any very great increase in the degree of opacity of the lens. The fact that in comparatively few of the eyes that present incipient cataract a condition is reached requiring extraction of the lens emphasizes the importance of our present subject, and seems to indicate that cataract is a senile condition in much the same sense as apoplexy or chronic interstitial nephritis.

The complete diagnosis of a case of incipient cataract usually reveals a certain degree of ametropia that in general should be corrected. I remember a case, sent to me over five years ago, supposed to be nearly blind and ready for early operation, in which the correction of the hyperopia gave vision of $\frac{15}{20}$ths in one eye and $\frac{15}{15}$ths in the other; the vision is still sufficient for all the ordinary demands of life. Hyperopia is the most common local defect in these cases. Very often it is combined with astigmatism, and at the age at which cataract most commonly occurs we frequently encounter cases with high degrees of regular astigmatism that deviate from the rule in that the meridian of greatest refraction is at or near the horizontal instead of the vertical. Such cases may readily be overlooked or be regarded as cases of irregular astigmatism. Myopia, allowing the patient to see near objects without the use of glasses, the so-called second sight of old persons, is also often a precursor or accompaniment of opacity of the lens. Whatever the form of ametropia, the improvement of vision obtained by its correction is quite as important to the patient, and is quite as likely to be appreciated by him as the same, or even a somewhat greater, degree of improvement wrought by operation.

It is uncertain in what degree accommodative strain is a direct cause of opacity of the lens, but it is probably causative to a considerable degree. Certainly in many cases opacities of the lens first appear at the age when accommodative strain from advancing presbyopia is at its height, and becomes stationary when the strain is removed, either by glasses, by discontinuance of the effort of using the eyes, or by complete loss of the power of accommodation. If in such cases the opacity be not primarily due to the eye-strain, it certainly is made worse by the strain.

We have yet much to learn about the etiology and treatment of cataract. Our ideas are far from clear, but amid the haze there stands out clearly the fact of the relation between choroidal disease and cataract. It has long been known that myopic eyes presenting serious choroidal changes are especially liable to cataract. It is also generally recognized that certain occupations, especially glass-blowing, strongly predispose to both cataract and choroiditis. I have noted that blacksmiths and others who work with heated metal, and professional cooks, exhibit this especial liability. In a large majority of cases of incipient cataract the opacity appears first and is most advanced in the lower quadrants of the lens, particularly the inner or nasal quadrant. The only

rational explanation of this that I know of is that these quadrants of the lens depend for their nutrition principally on the adjoining portions of the choroid, which are the portions most exposed to the glare of light and heat from above, and are therefore most liable to and most deeply involved in chronic choroidal inflammations.

Many surgeons, too, have noted the frequency with which the ophthalmoscope reveals choroidal changes when the opaque lens has been extracted, or rather the extreme rarity of the absence of such changes; but it is only recently that a fellow-member, Dr. S. D. Risley, in the *University Medical Magazine* for March, 1889, and again in a paper read at the recent meeting of the American Medical Association, has completed the demonstration of the connection between choroiditis and cataract by extensive and careful clinical study of the subject, including a series of cases of incipient cataract, in 70 per cent. of which one or both eyes presented demonstrable disease of the choroid.

It has long been recognized that the vitreous body and the crystalline lens are equally dependent on the uveal tract for their supply of nutrient fluid, and the connection between choroidal disease and vitreous opacities has been clearly recognized. It seems strange that more importance has not been attached to the relations of such disease to opacities of the lens. It cannot be doubted that the failure to recognize such a relation has in practice led to neglect of patients with cataract. No one would tell a patient with commencing or recently acquired vitreous opacity that nothing could be done for it, unless in the course of time it became so dense as to justify a resort to an operation, and then that tearing it asunder might partially restore sight. We treat such opacities mainly through the choroiditis that accompanies them, often with improvement and sometimes with complete restoration of vision. The treatment of opacities of the lens cannot lead to a similar restoration of that part to its original integrity, for we have to deal with a structure practically composed of non-living epithelial substance, instead of a connective tissue; but such treatment may in the one case be just as efficient in preventing further advance of the opacity as it is in the other. There are a few cases of diffuse clouding of the lens that I am satisfied, under appropriate treatment, clear up in quite an appreciable degree. Certainly no patient with cataract has justice done him until evidence of choroidal disease has been carefully sought, and if discovered met by treatment.

The treatment of choroidal disease, particularly the chronic inflammations, is too extensive a subject to take up in detail here, but these are its principal general features: 1. The relief of eye-strain by the correction of errors of refraction; making good deficiencies of accommodation by means of the proper glasses, and strict moderation in the use of the eyes. 2. Avoidance of excessive exposure to light and heat, whether the excess be in the intensity of the light or in the length of the exposure; this may involve change of occupation for the cook, the blacksmith, or the fisherman, as well as the employment of dark glasses and of other more usual precautions. 3. Attention to the extra-ocular conditions pertaining to the general nutrition, for these powerfully influence the structural and functional perfection of the nutritive coat of the eye.

This last field, with joint investigations carried on by the ophthalmic specialist and the general practitioner in close association, promises much. Few general practioners, perhaps, would be able to observe and record the minute changes that mark the course of choroidal disease in a progressive, a stationary, or a regressive,[1] incipient cataract; while no one but the regular medical attendant could steadily follow the course of the general health and systematically carry out a line of treatment. That opacity of the lens does, as a rule, appear and progress mainly during periods of impaired general nutrition, and that there is a tendency to an arrest of its progress with improvement in the general health, may be regarded as certain in a large number of cases.

From time to time it is claimed that cataract has been cured without operation. The popular application of the term cataract, however, is so loose and indefinite, and the improvable or curable diseases that may be associated with opacity of the lens are so numerous, that one who understands the subject and is acquainted with the history of past errors in this direction is always tempted to summarily dismiss all such claims.

One of these alleged remedies that in various forms has repeatedly been put forward is manipulation of the globe. It is worth referring to now, because Dr. R. Kalish, of New York, has recently narrated some cures of cataract by a form of manipulation, conjoined with the instillation of a solution of boric acid in rose-water and glycerin, and with general medication. Dr. Kalish's reports[2] of his cases seem too rosy; they do not give sufficient evidence that the phenomena have been subjected to the searching white light of scientific scepticism; they remind

[1] Let this use of the word regressive not be misunderstood. It is not meant to imply that any considerable number of opacities of the lens diminish in degree or that any entirely disappear. So far as I know it is only strictly applicable to the few cases of diffuse clouding of the lens already referred to, and to these for comparatively brief periods of their duration. I hope that it may become more widely applicable to these, but at present the most we can expect for any considerable number of cases of incipient cataract is that they will become stationary.

[2] Medical Record, March 29 and December 30, 1890.

one of a recent paper read before a homœopathic society narrating five cases—one in the person of an "allopathic physician"—in which great improvement took place after the use of "iodoform 3x." Still, in this connection it is worth while to note that Mr. J. T. Thompson, of Cardiff, England, has reported[1] a case in which, after a Foerster's operation for the artificial maturation of cataract by iridectomy and the stroking of the lens through the cornea, the vision was first reduced to counting fingers at three or four feet, and then improved, with actual clearing up of the opacity of the lens, until the patient, depending on this eye, was able to read moderate-sized print and to do her housework. It is probable that manipulation may influence the nutrition of the lens, and it is quite possible that it may cause diminution of a certain form of opacity of the lens. The subject is probably worthy of further investigation.

The dilatation of the pupil by the use of a weak mydriatic solution when the opacity is confined to the centre of the lens, is a measure that has long been recommended in our text-books. It is of service in a few cases. In a greater number of cases in which the periphery of the pupil is involved, and especially when the change in the lens has given rise to irregular astigmatism without much actual opacity, a condition that may continue for years, considerable relief may be afforded by causing contraction of the pupil by means of a weak solution of eserine or pilocarpine.

Even if all treatment fails to arrest the progress of the opacity of the lens and useful vision is lost, it is not, as formerly thought, needful to wait until the whole of the tissue of the lens becomes opaque before proceeding to extraction. Aside from Foerster's operation for hastening maturation, the extraction of immature cataracts is not so difficult and uncertain as it was formerly supposed to be. Peripheral capsulotomy and the washing out of clear cortex by some such method as that advocated by Dr. Lippincott at our last meeting, reduce the extra risks of such extraction until they are very slight.

In the present state of ophthalmic surgery, instead of saying to a patient, "You have cataract; nothing can be done for it now; you must wait till it ripens and undergo an operation; then, perhaps, with strong lenses you will be able to see again;" it is nearer the truth and a better performance of professional duty to say, "You have a commencing opacity of the crystalline lens; it is essential that you take good care of your eyes, using them moderately and with the proper correcting lenses; you must pay careful attention to your general health and have the proper treatment for diseased conditions that may be causing this opacity. If you are able and willing to attend to these things the probability is that you can preserve your sight for a long time, perhaps throughout life; and even if this is not granted, you will be placed in the most favorable condition for the restoration of vision by a comparatively safe and painless operation as soon as your vision has failed so far as to be no longer useful."

[1] Royal London Ophthalmic Hospital Reports, December, 1890.

PNEUMO-THERAPEUTICS.[1]

BY DR. HOVENT,
OF BRUSSELS.

BATHS of compressed or rarefied air are given by means of seven iron chambers of varying capacity, some being capable of comfortably containing from two to ten persons. Each chamber is well constructed; it is supplied with several windows of glass two centimetres (three-quarters inch) thick; it has a duplicated door, or perhaps better expressed, two doors enclosing a lobby, in which the doctor, entering by the outer door, can shut himself, and then equalizing the pressure, can open the inner door and speedily reach the patient for any purpose, without great alteration of the pressure in the chamber. Another smaller door, also duplicated, serves for the purpose of handing to the patient books or whatever may be desired. Electric-bell, elbow-chairs, toilet-tables, manometer, thermometer, hygrometer, etc., are all at hand.

From the chamber so described emerge six pipes, leading to the underground tanks of 1, compressed; 2, rarefied air; 3, nitrogen; 4, oxygen gas; the remaining two pipes are for the purpose of purifying the air. Each of the first four pipes is attached to a little tank which permits of the measurement of the quantity of air, nitrogen or oxygen introduced into the chamber, or of the quantity of air removed.

The large tanks in which the air or gas is compressed, or rarefied, are ten in number. Each holds several thousands of litres. The compression or the rarefaction of air or gas is obtained by means of a gas-engine of eight-horse power. The tanks will bear seven or more atmospheres of pressure, or a corresponding degree of rarefaction.

The manipulations are as follows: If it is desired to place the patient in a chamber, and the pipe connecting the chamber with the tank of compressed air, for instance, is opened, this compressed air rushes in; its quantity can be regulated according to circumstances. The reverse takes place if rarefied air is to be used; the air of the chamber rushes out, and the patient remains in a relative vacuum.

One serious and even capital drawback to the

[1] Abstract of a communication to the Philadelphia County Medical Society.

employment of air-baths lies in the fact that in the course of the two hours, the duration of an ordinary sitting, the air within the cabinet soon becomes foul from the processes of respiration, perspiration, etc. The establishment at Brussels is the only one in which this inconvenience is efficaciously overcome. The air is being constantly withdrawn from the occupied chamber, and purified by being passed through several iron Wollf's jars containing chemicals, to be again introduced, the same degree of positive or negative pressure being always maintained.

It may be desirable to impregnate the atmosphere of the chambers with the vapor of certain medicinal agents; it is an easy matter to place the substance to be used in the path of the air current, or more simply to put some drops of an essence on boiling water into the chambers. Pumiline essence I frequently and successfully use.

The compressed air bath more completely expands the pulmonary vesicles and increases their elasticity; the diaphragm and the base of the lungs descend lower; the respiratory process is more perfectly and less frequently performed; the peripheral circulation is less active, with some degree of decongestion of the skin and the mucous membranes (nasal, laryngeal, pulmonary, etc.); the pulse is less frequent and more full; the appetite and strength increase rapidly; the nervous system is undoubtedly invigorated. One may observe that these effects are corollaries of one another, and result either from mechanical or chemical action; indeed, the oxygen of compressed air is no longer oxygen, but some form of ozone.

The rarefied air bath has not been so well studied; nevertheless, it is employed with much success by some practitioners, who seek in it a reproduction of mountain atmosphere. It has also been recommended for rickety children, when the thorax is deformed. Recently it has been used alternately with the compressed air bath, when a doubt exists as to whether a patient should be sent to the mountains or to the seashore. The therapeutic uses of the air-baths are very numerous, but easily deduced from the foregoing considerations.

Asthma is the principal affection for which compressed air baths are employed. Eighty per cent. of recoveries are obtained after from twenty to sixty sittings. During the first sitting the dyspnœa disappears when the pressure of air is sufficient; this result becomes permanent only after a number of sittings.

In pulmonary emphysema the air-bath empties the vesicles and increases their elasticity, so that the dyspnœa diminishes. The first sitting is usually followed by a notable improvement. As in asthma, the success is generally striking and permanent. Pulmonary congestions, pulmonic processes, preceding or following pneumonia, and hæmoptysis, are cured mechanically, since the compressed air provokes anæmia of the pulmonary tissues. Chronic bronchitis and bronchorrhœa are always improved, so far as concerns dyspnœa, cough, expectoration, and general health. The first effects of the treatment are an increased expectoration, up to the point of completely ridding the lungs of mucus, and simultaneously a decongestion of the respiratory mucous membranes. The last action must be invoked in explaining the beneficial influence of compressed air in coryza, chronic pharyngitis, and laryngitis, and in that exaggerated susceptibility of the mucous membranes, as a result of which the patient is constantly exposed to the danger of catching cold. I have recorded two cases of chronic amygdalitis, in which resection had been contemplated, and in which I obtained complete cures by compressed air baths.

In whooping-cough, "the beneficial action of air-baths is undeniable," said Dujardin-Beaumetz. The cure is obtained after from ten to fifteen sittings; and generally the child gains from one to three pounds in weight. Jaccoud charges with gross neglect the physician who does not submit his consumptive patient to aëro-therapy. Oertel thinks the compressed-air treatment far superior to climatic treatment in any country. Professor Bertin (Montpellier) has recorded five cases of recovery in consumptives in the third stage.

Heart disease had long been considered the only drawback to aëro-therapy, but since I have successfully treated a number of cases with cardiac complications, I no longer hesitate to treat such cases, only using certain precautions.

In catarrhal deafness compressed air effects a natural catheterism. I have not infrequently seen patients suffering from asthma or other complaints emerge from the chamber declaring that their hearing was better than for many years.

Dujardin-Beaumetz says: "Compressed air baths are to be preferred to any other method of treating chlorosis, anæmia, diabetes, albuminuria, and gout."

Obesity, also, is favorably influenced, as a result of the acceleration of organic combustion, and the more active elimination of urea and carbonic acid.

In conclusion, I must add that Dr. Arntzenius has cured some cases of neurasthenia, and that I have recorded three observations of dysmenorrhœa permanently cured by a pneumo-therapeutic course. I think these results are due to the general invigorating power of the treatment.

Professor Klug, of Klausenburg, has been unanimously elected to fill the Chair of Physiology at the University of Budapest, made vacant by the death of Jendrássik.

HOT INFUSION OF DIGITALIS IN THE TREATMENT OF PNEUMONIA.

BY E. P. HERSHEY, M.D.,
OF DENVER, COL.

DURING the past three months, excellent opportunity has been afforded me to test the value of the treatment of pneumonia by means of large and frequently-repeated doses of the infusion of digitalis, given early in the attack. The marked benefits resulting in a few cases thus treated last fall suggested its great importance and bolder use. In twenty cases, the treatment was commenced by the administration of ten grains of the mild chloride of mercury, together with a tablespoonful of the infusion of digitalis, given every hour, as hot as the patient could drink it. In from six to ten hours, profuse perspiration occurred in every case, followed in twelve cases by a normal temperature. In three instances, the temperature, without the use of any antipyretic, dropped to 100°, in four, to between 101° and 101.5°, and in one, to between 103° and 105.5°. In no case was the temperature below 103° when first seen, and in all but one, it was ushered in by a distinct rigor. In all the cases the characteristic rusty sputum was present, but its short duration showed clearly that the inflammatory process had been cut short.

The severest case was that of G. J., a laborer, aged thirty-two, in whom there was violent delirium from the outset. The patient, having felt ill for nearly twenty-four hours, had a violent chill at 4.30 P.M., February 25th. At 6 P.M. the thermometer showed a temperature of 105.5°; the was pulse 130. His attendants had him strapped to the bed. Crepitant râles were heard at the base and over the middle lobe of the right lung, anteriorly and posteriorly. The patient was given ten grains of calomel, followed in one hour and a half by a tablespoonful of a hot infusion of digitalis, the latter being repeated every hour, despite the fact that the temperature at 11 P.M. had fallen to 103°, at 5 A.M. to 101°, and the pulse to 115, with a general improvement of all the manifestations of delirium. At 6 A.M. there was profuse expectoration of rusty-colored sputum, that continued for twenty-four hours. On the third day the temperature returned to 105°; after active purging, it fell rapidly. On the morning of the fourth day the pulse had dropped to 50, the temperature to 96°. The infusion of digitalis was discontinued, and a combination of camphor, strychnine, and quinine given. Convalescence was rapid, and just ten days after the beginning of the attack the patient was up and about. The loss of weight in this short attack was remarkable. At the beginning of the attack the man weighed about 168 pounds; on March 7th he weighed 144½—a loss of 23½ pounds.

That the hot infusion of digitalis acts quickly upon the cardiac muscle that forces the blood through the affected area and thus to a marked degree overcomes the dyscrasia, is probably the *rationale* of the action of the drug. The use of a large dose of calomel, by reducing the consistency of the blood, takes the place of the old-time method of bleeding.

Since investigating this subject, with the view of publishing the results obtained, I have read with no little interest the report of Petresco,[1] who used the remedy still more heroically, making an infusion of ten grains of the powdered leaves instead of seven, to the ounce, and giving a tablespoonful every half hour instead of every hour. There can be no doubt that the results obtained in the cases reported were due to the solution being given hot; I have found that, in the use of drugs intended to act quickly upon the circulation, their diffusion is more rapid if given hot. This method of administration was suggested to me by Dr. D. D. Stewart, of Philadelphia, who first reported that the administration of sulphonal in hot water gave better and more rapid results than when the drug was given dry or in cold solution. In the twenty cases treated no ill results followed these large doses of digitalis. However, it would be advisable to watch the circulation; in case of a sudden lowering of the pulse-rate, the infusion should at once be stopped, for this is an indication that the desired effect of the remedy has been obtained; should slow pulse and low temperature persist, nothing will stimulate better than camphor, quinine, and strychnine, in quantities suitable to the case. Alcohol was not used until the temperature had subsided. In none of the cases was the so-called standard remedy, carbonate of ammonia, used. Further investigation will be made with this method of treatment, and when a sufficient number of cases has been treated an additional report will be made. At present this method of treatment has yielded me far better results than any other.

A CASE OF MULTIPLE SARCOMA.[2]

BY AMAND N. RAVOLD, M.D.,
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LAST June, while making a visit at the Good Shepherd Convent, I was asked to see one of the inmates, a penitent, who was suffering with a severe and persistent pain in her leg.

The patient was a handsome, vigorous, healthy-looking young woman, twenty years of age. She was cool and deliberate, and answered all questions frankly and truthfully. She said that for about a week she had been troubled with a constant dull, throbbing pain in her right leg, which from the beginning had steadily increased in severity. At first

[1] Lancet, April 18, 1891, p. 895.

[2] Read before the St. Louis Medico-Chirurgical Society, April 21, 1891.

she could detect nothing abnormal at the seat of the pain, but for the last few days she had been able to feel a small hard lump there. During the day while at work it did not annoy her much, but at night, and especially when in bed, it was worse, and for the last night or two had interrupted sleep. It had not as yet interfered with walking. On inspection I found nothing abnormal in the appearance of the leg, but about six inches below the patella, just on the inside of the tibia in the connective tissue between the muscles, I found a small hard ovoid mass about the size of a pecan, that felt like an enlarged gland and that was not freely movable. It appeared to be held in place by strands of tissue that ran into it from all sides, so that attempts to move it seemingly tightened these strands and caused a great deal of pain; simple pressure, though annoying, was not so painful. There was no history of a sore on the limb, nor were the glands in the leg, or thigh, or groin enlarged. Her health was good and had always been so. Her father and mother were living and in the best of health, their parents having been hard-working, long-lived people, with no history of malignant tumors, syphilitic or tuberculous diseases in their families. The patient's mother afterward confirmed these statements. I concluded that the tumor was a malignant growth, but of what kind I could not decide. Tuberculosis was excluded by the history, and yet the growth felt very much like an enlarged gland, and it certainly was encapsulated. Sarcoma it might be, but in the beginning, as a rule, sarcomatous growths are not accompanied by pain. Carcinoma it resembled more than anything else, but no history justifying the diagnosis could be obtained. I was quite certain that it was non-syphilitic. I told the patient that the only way to cure her trouble, since the infirmarian had failed to relieve her pain, was to remove the growth. This she mildly but firmly refused to have done, unless after a fair trial I should fail to afford her relief by medication. I am sorry to say that I consented to this arrangement, but I told her that the growth was a malignant one, and that although relief from the pain might follow the medicine, cure was possible only through surgical interference.

I ordered iodine to be painted on the skin over the tumor, and gave a prescription containing: Potass. iodidi, gr. 5; potass. bromidi, gr. 10; morph. sulph., gr. $\frac{1}{8}$; to be taken three times a day.

The date of this visit was June 24, 1890. I saw her again July 4th. When she entered the room I noticed that she was quite pale and that she limped a little, and was evidently suffering a great deal of pain. She said that for the last two days she had had pains in her left hip-joint and right groin, and that in the groin two lumps had made their appearance. On examination I found the mass in the leg fully twice as large as when I first saw it, and very painful to pressure. In the right groin just below Poupart's ligament two superficial glands were enlarged to about the size of an English walnut, and extremely tender to the touch. I was unable to find a growth of any kind about the hip, though pain deep in the joint was complained of. On my demand, Dr. H. H. Mudd was called in consultation. He visited her the same day, and advised an immediate operation. She again positively refused to be operated upon. He suggested that the sedative mixture be continued. In place of iodine, mercurial ointment was smeared on a piece of chamois skin and bound over the growths. This treatment and others that were afterward substituted for it failed to afford any relief. The mass in the leg grew at a fearful rate; within two weeks she was confined to her bed, unable to use her right leg, which was now twenty inches in circumference and exceedingly painful. The growth in the groin was painful, had spread to all the neighboring glands and was pushing its way through the tissues out upon the thigh, the abdomen, and down along the vulva. Within another week a swelling appeared over the upper part of the sacrum and spread rapidly. On the right elbow another growth showed itself, grew very fast in, about, and around the joint, and finally ankylosed it. About a week after this she complained of a feeling of fulness in her left eye, and on close inspection I could see that the eye bulged slightly, so that six weeks after the patient was first seen she was bedridden and suffering with five rapidly growing tumors. They grew in the following manner: From the gland-like encapsulated enlargements the growths spread in every direction, infiltrating and destroying all tissues save bone. The skin involved took on a brownish-yellow hue, and became thick, coarse, and harsh, resembling more the leather on a pig-skin saddle than anything with which I can compare it. In the skin and under it the blue tortuous veins could be distinctly outlined, while at occasional intervals telangiectatic collections of bloodvessels appeared, burst, and formed small blood blisters, which in their turn would break, discharge, and leave a quickly-healing superficial ulcer. The mass felt semi-solid and elastic to the touch, and in some places nodular. The pain was still dull, aching, and throbbing in characacter, persistent, but periodically worse or better.

She bore her sufferings with remarkable fortitude, but when asleep she would groan or cry out in distress. Opium afforded her rest, especially at night, and it did not interfere with her appetite, which remained good. The bowels throughout the disease were regular. About this time the pains in the leg changed for the worse, became lightning like in swiftness, and burning or tearing in severity. She said it felt as if some one had seized the mass with a red-hot, long-toothed vice, and was trying to crush it. The attacks occurred without apparent cause or warning, sometimes as often as every three hours, but, as a rule, not more than once a day. Terrible in intensity, they varied in length from a quick flash in and out of the tumor to those of several seconds' duration, and then vanished as quickly as they had come. She now became emaciated, showed marked cachexia, and became very irritable. Her cheerful look gave way to one of anxiety and despair. The mass behind the eye grew at an appalling rate, shoving the eye before it downward and forward as low as the level of the mouth, giving her a frightful

appearance. As she suffered no pain from it she refused to have it enucleated. The swelling in the groin had grown so large that it now turned the thigh outward and fixed it in that position, compelling the patient to lie on her back all the time; the tumor at the right elbow prevented the use of that arm, so that she was practically helpless. The growth at the sacrum had spread in all directions, and eventually broke down to form a large suppurating bedsore fully ten inches in diameter. This the nurses were unable to prevent, as the patient had become so apprehensive of the painful seizures, and so irritable and helpless, that she refused to allow them to move, or touch, or properly cleanse her. All through the hot month of August the patient's sufferings were horrible in the extreme. Early in September she complained of a difficulty in swallowing, and on examination a tumor was discovered growing between the œsophagus and the spinal column, on a line with the lower end of the larynx. It grew rapidly, soon prevented deglutition, and began to seriously impede breathing. Fever, which was contemporary with the formation of the bedsore, and probably due to absorption of the septic products from it, now became high and continuous. Finally, unable to take nourishment, and exhausted by fever and pain, she died on the 21st of September.

The mother of the girl refused to allow a complete autopsy to be made. I nevertheless secured a large piece from the mass in the leg at the sight of the original tumor, which, upon examination by Dr. H. C. Hartmann, proved to be a small round-celled sarcoma.

THE TREATMENT OF TINNITUS AURIUM.[1]

BY LAURENCE TURNBULL, M.D.,
OF PHILADELPHIA.

IT is not the object of this paper to dwell at length on the treatment of the various forms of tinnitus, but to omit a discussion of those that are well known and treated by every medical man, as for instance, the tinnitus dependent upon the presence of cerumen, pressing on the membrana tympani, that due to inflammation or abscess in the meatus, to an exostosis in the meatus, to catarrhal processes in the tympanum and Eustachian tubes, to perforation of the membrana tympani, or to a polypus in or near the same region, and to dwell on the more obscure forms encountered in disease of the internal ear, labyrinth, and auditory nerve, and on the reflex causes of deafness with tinnitus.

It is now well known that there exists a connection between the auditory nuclei in the medulla and pons and the cortical auditory centres of either side of the brain, and that the "sense of hearing is in greater part situated in the temporal lobe, and more especially in the superior temporal gyrus of this lobe." As Dr. Ferrier has stated,[1] tinnitus may occur in both ears as the result of unilateral irritation, owing to the intimate connection of the auditory nerves and the centres. The cases of sensory cortical discharge, reported by Hughes Bennett,[2] may be advanced, Dr. Ferrier thinks, in support of this view. Ferrier[3] quotes Baginsky as stating that the auditory nerve is in relation with the auditory centre of the cortex through the lower fillet of the corpora quadrigemina and internal geniculate body to the medullary fibres of the cortex.

According to Prof. Jones we may thus classify the principal sources of reflex irritation or inhibition of the auditory nerve: (*a*) Through communications at the nuclei of origin; more especially might this occur through the sensory fifth and tenth nerves; (*b*) through the communications with the facial in the internal auditory meatus, the reflections from this connection being transmitted along the petrosal nerves from the otic and Meckel's ganglia and the parts supplied by them; (*c*) through communications between the nerves supplying the tympanic structures and Meckel's ganglion and the otic and geniculate ganglia; according to Foster, the activity of the tensor tympani muscle is regulated by reflex action; (*d*) irritations may be reflected to the cerebellum or to the auditory centre, and be referred to the ear or to different parts of the head.

The researches of Gaskell are most important as to the presence and course of vaso-constrictor and vaso-dilator fibres (that control the blood-supply by constriction or dilatation of the small vessels); the former originate from the upper part and the latter from the whole length of the spinal cord; these fibres pass through the cervical ganglia of the sympathetic and thence to the various arteries, furnishing (in the case of the auditory nerve) the supply of blood to the ear, more especially through the internal auditory artery from the basilar. The fact is also of importance that certain nerves, as the trigeminus and the cervical sympathetic, appear to be supplied with special "pressor" fibres (McKendrick), that have the power of constricting the vessels, as a result either of direct or reflected irritation, which irritation, as in the case of the cervical sympathetic nerve, must have an important effect on the circulation of the ear.

Of the various other nerve-communications and distributions in the ear that bear on reflex irritation, I would remind you of the connections between the glosso-pharyngeal, fifth, and sympathetic nerves; as, for example, the innervation of the tensor tympani

[1] An abstract of a paper read before the Section of Laryngology and Otology of the American Medical Association, at Washington, D. C., May 6, 1891.

[1] In a letter to Dr. Macnaughton Jones. "On the Etiology of Tinnitus Aurium," pamphlet, pp. 6, 7, British Medical Association, London, 1890.

[2] Lancet, 1890.

[3] Croonian Lectures, 1890.

and stapedius from the otic ganglion and the facial nerves respectively; the communications in the tympanic mucous membrane between Jacobson's nerve, the sympathetic and the geniculate ganglion of the facial nerve; and the other communications between the carotid plexus of the sympathetic, Jacobson's nerve and the otic and Meckel's ganglia, thus bringing all these nerve communications into direct relation with the superior cervical ganglion. The supply of the anterior wall of the external auditory meatus and the tympanic membrane from the auriculo-temporal is important as bearing on reflex irritations from affections of the external meatus, that cause tinnitus when the middle ear is healthy. This sensory supply, be it remembered, is connected with the facial and pneumogastric nerves.

With regard to the physiology of hearing, it does not appear that there are any proofs that separate centres exist for the perception of different kinds of sound. A sensation arising from any irritation transmitted to the auditory centre may be referred to the periphery, that is, to the origin of the nerve-filaments in the labyrinth (McKendrick). The receptive auditory centre is possibly in part situated in the cerebellum. Professor McKendrick (in a communication to Professor Jones) states that an irritation, either in the labyrinth, the auditory nerve, or the receptive centre will "produce a stimulus in the hearing-centre which will cause a sensation or a series of sensations which will always be referred to the labyrinth." Such irritation may be caused by anything that interferes with the normal equilibration of the fluid in the labyrinth or by any direct or reflected irritation of the nerves of the external meatus, the middle ear, or labyrinth. The irritation may follow or attend the presence of adventitious matters in the blood that circulates in the receptive centre, as well as alterations in the blood-supply dependent upon increase or diminution of blood-pressure. This latter condition, occurring either at the periphery, in the cerebellum, or in the course of the auditory nerve, would in itself be sufficient to give rise to irritation of the hearing-centre.

As Professor McKendrick rightly insists, it has to be remembered how exquisitely sensitive the auditory nerve-apparatus is, a fact with which all are acquainted who have studied the physiology of the ear in its perceptive powers and its faculty of differentiating, analyzing, and synthetically arranging sound-waves.

Certain disturbances in the equilibration of the labyrinthine fluid or reflex irritation of any part of the nervous apparatus of the labyrinth or irritation of the auditory nerve-nuclei may give rise to vertigo as an accompaniment of tinnitus. Stimulation of the cerebellum or of the cortical auditory centres may have the same effect; such stimulation may be reflected; under these conditions deafness is not a necessary accompaniment of the vertigo, nor is it absolutely necessary that there should be local aural changes discernible in those presenting the symptoms portrayed by Ménière.

CLINICAL MEMORANDA

REPORT OF A LUMBAR NEPHRECTOMY.

BY WILLIAM D. HAMILTON, M.A., M.D.,
VISITING SURGEON OF THE MOUNT CARMEL HOSPITAL, ETC.,
OF COLUMBUS, OHIO

ALBERT G., aged thirty-six, a dairyman, of Camp Chase, Ohio, was seen in consultation with Dr. H. P. Woodruff, of Alton, during January, 1891. He had had scarlatina in the preceding August. In October, 1890, he had suffered dull pain in the left loin, which followed the course of the ureter. He had hectic fever, and his urine contained a large quantity of pus. His appetite was poor, and he had lost fifty pounds of flesh in the past year. In the left loin, rather in the inguinal than lumbar region, could be felt a tender lump, shaped like a kidney, but several times the normal size of a kidney. Examination showed his lungs to be sound, and there was no evidence of involvement of the right kidney. Tests made by Dr. F. W. Blake indicated that the daily excretion of urea was about normal. The diagnosis made was that of scrofulous kidney.

A lumbar nephrotomy was done on January 10th, at the patient's home. It was found that the kidney had been converted into a number of cavities, containing thick pus and urine. An incision into the kidney allowed the finger to enter the pelvis. The abscesses were evacuated and a large drainage-tube was inserted at the middle of the parietal incision, three inches behind the iliac spine and near the crest.

On February 24th, forty-five days after the operation, the patient entered Mt. Carmel Hospital. There was free discharge of pus through the drain. He was passing more than a quart of urine daily. On only two or three occasions since the nephrotomy had he been without fever, and his urine had never been free from pus. His appetite was fair, and the sweats had diminished in the past fortnight. He slept well, had no pain and no chilly sensations, but had not gained in flesh or strength. The bladder was somewhat irritable. In the twenty-four hours preceding February 28th, the date of the second operation, he passed thirty-one ounces of urine. On account of the persistence of the symptoms, it was concluded that there were other tuberculous foci in the organ.

At 10 A.M. ether was given, Dr. Woodruff and Dr. Norris being present. Lumbar nephrectomy was done. The loin was washed with soap and water, and then with a carbolized solution. The patient was placed on the right side on a firm pillow, in order to put the other loin on the stretch. A six-inch incision was made half-way between the last rib and the crest of the ilium, parallel to the latter, and, in addition, an incision downward from the middle of the one described, freely exposing the fatty capsule of the kidney. Owing to the nephrotomy the parts were so matted together that the proper and fatty capsules were not easily distinguishable. Having incised

the fatty capsule enucleation was easily accomplished, thereby isolating the pedicle. A blunt needle threaded with coarse silk was passed between the ureter and the vessels, the lateral halves of the pedicle being securely tied. The several pus-cavities were cut into and the caseous contents were emptied, in order to diminish the size of the kidney and to facilitate its removal. It was cut away piecemeal with scissors, a large button of renal tissue, which was expected to necrose, being left to prevent the ligature from slipping. A saturated solution of the chloride of zinc was applied to the stump. The wound was flushed with hot water and dressed with gauze, through which the drains appeared. At 4.30 P.M. of the same day the pulse was 102. The patient was very pale. The dressings were soaked with brownish discharge and required changing. During the night he voided between eleven and twelve ounces of urine. In the six days beginning March 2d, the average quantity of urine passed daily was eighteen ounces. The stitches were removed on March 7th. The portion of the wound in which the pedicle lay was lined with granulations, and as the stump had not separated, it was constricted with rubber tubing. March 27th the stump and ligature came away. April 13th he was discharged convalescent. At one time there was a slight escape of gas and feces from the large intestine into the wound. Firm strapping, with absolute rest in bed, caused the fistulous opening to heal. The man is gaining rapidly in flesh and strength, and is entirely free from fever and sweats. The urine contains no pus and is abundant in quantity.

This is the fourth nephrectomy that the writer has done. The patients have all recovered. The other cases have been reported in the *Medical Register*, of Philadelphia, and the *New York Medical Journal*. In every instance a preliminary nephrotomy was performed. Occasionally this proceeding is curative, and the sequel determines the question whether or not the kidney be hopelessly damaged. However, Mr. Henry Morris, the distinguished English surgeon who has had a broad experience in operations on the kidney, prefers immediate nephrectomy, if the patient's condition permits.

THREAD- OR SEAT-WORMS.

By W. THORNTON PARKER, M.D., M.M.S.S.,
OF SALEM, MASS.

A recent communication in The Medical News concerning thread- or seat-worms has attracted my attention. Generally speaking, the medical attendant is less frequently consulted than the family druggist when treatment is needed for "worms." Especially in small towns do we find such-and-such a druggist more or less famous for his "worm" mixtures. The doses given by regular practitioners of medicine are sometimes of such nauseating character that it is found almost impossible to administer them to the little sufferers. The profession frequently regards thread- or seat-worms merely as a temporary annoyance, and does not attach great importance to their presence; and yet we often encounter children seriously ill from no other cause. While agency physician among the Chippewa Indians, I was called to attend several children so seriously infested with these parasites that I was unable to prevent a fatal termination. In recent years I have seldom used vermifuges, relying wholly upon the following course of treatment: Copious rectal injections of chloride of sodium in solution, or of boro-glyceride, one to twenty, followed by small rectal suppositories of boro-glyceride, have constituted my regular practice, invariably with good results. A dose of fluid extract of spigelia and senna in the morning, with a moderate dose of castor oil a few hours later, with reasonable attention to errors in diet and particularly as to the water-supply, is all the additional treatment required. It would seem to be unwise to dose the little patients with the risk of injury to the stomach and intestines for the sake of removing some irritating thread-worms, the habitat of which is the rectum.

ORIGINAL LECTURES.

PLEURISY WITH SEROUS EFFUSION—ACUTE CROUPOUS PNEUMONIA.

Abstract of a Clinical Lecture delivered at the Bellevue Hospital.

By ALFRED L. LOOMIS, M.D.,
VISITING PHYSICIAN.

Gentlemen: This man, twenty-five years old, was well until five weeks ago, when he was seized with pain in the side, passing up to the shoulder, for which he knew no exciting cause. There was no chill. He found that he could lie most comfortably on the left side. Two weeks ago he began to be troubled with shortness of breath and his appetite became poor. When admitted to the hospital his pulse was 92, the respirations 28, and the temperature 103.2°. Since then, the temperature has ranged from 101° to 103°, and to-day is 101.4°. The pulse has varied from 78 to 98, and the respirations from 20 to 28. The prominent symptom is pain; quite recently there has been added shortness of breath. The fact that dyspnœa was not present at the onset of the attack, would lead us to expect the existence of a serofibrinous pleurisy.

The countenance is not anxious; the right side of the chest does not move as freely as the left. The pulse is about 82, of pretty fair quality. The apex-beat is displaced to the left about one and a half inches, and is a little above its normal position. Hypertrophy of the heart might displace the apex-beat to the left, but it would at the same time depress it. Enlargement of the left lobe of the liver might displace the apex to the left and upward, but not to the extent that we find in this case. Anteriorly, over the upper part of the right lung, there is increased resonance of a tympanitic quality. Posteriorly, the chest expansion is found to be diminished to about an equal extent on both sides. Vocal fremitus is subject to certain variations in connection with pleurisy with effusion, and in order to understand the reason for these, it is necessary to refer to the physical laws governing the conduction of sound-vibration. Sound-vibration is not transmitted with equal readiness through media of different densities. Hence, if the lung be separated from the chest wall by fluid or plastic material, the vibrations of the voice must pass through the lungs, a structure containing air, and then through the exudation, which contains little air. Under such physical conditions, the sound is conducted very feebly, if at all. In certain

cases of pleurisy with effusion, bronchial breathing and increased vocal fremitus are present, while in others, these are absent. Ordinarily, the bronchial tubes are collapsed from pressure, but if the pressure is not sufficient for this, or if the bronchial tubes are very rigid, they may remain open, and so give rise to bronchial respiration, bronchophony, and increased vocal fremitus. In this patient the respiratory murmur is heard only above the middle of the right scapula, and the voice-sounds are a little more intense just at the point where the ear passes below the level of the fluid. Further down these sounds become more feeble, and finally are inaudible. It is probable that in this case the pleural cavity has contained even more fluid than it does at present; the absence of vesicular breathing and the extensive area of dulness, lead us to believe that the entire pleural membrane has been involved. In an uncomplicated case of sero-fibrinous pleurisy, the temperature rarely rises above 101° or 102°; although it has been unusually high in this case, it has not been high enough, nor have the constitutional symptoms been sufficiently severe, to indicate the existence of a suppurative pleurisy. In suppurative pleurisy the temperature is often 104° or 105°, and not infrequently higher than in acute pneumonia. There is also usually much more prostration than is present here. My impression is that the fluid has already begun to subside; this brings up the important question of treatment. The man has been sick for five weeks. If this were your first visit to the case, you would not aspirate immediately, unless the pleural cavity were distended with fluid and there were extreme dyspnœa. Under these circumstances, it would not be safe to leave the patient in such a condition. Some advise aspiration whenever the pleural cavity is two-thirds full of fluid; they claim that by this method of treatment recovery is hastened. My own experience leads me to a directly opposite conclusion, and I therefore prefer to wait, as I shall do in this case, until Nature has had a fair opportunity to remove the fluid herself. There is a great temptation to make an exploratory puncture with a hypodermatic syringe to ascertain the nature of the fluid, but many a serous effusion has in this way been changed into a purulent one. If such a procedure be resorted to, the greatest care must be exercised that the needle be aseptic.

The next patient is a man, thirty years old, who had been engaged in his occupation of a bricklayer until ten days ago, when he was suddenly seized with what he supposed to be chills and fever, as he had suffered from fever and ague a number of years before. Two days later he had another chill followed by fever, and on the following day he began to suffer from pain in the right shoulder, increased by deep inspiration. After two days more, the pain still continuing, but without a return of the chills, a cough developed, accompanied by a yellowish, fairly abundant and tenacious expectoration, that, after twenty-four hours, became of a reddish color. Just one week after the initial chill he was admitted to the hospital, with a temperature of 103°, that on the following morning reached 104°, and is at present 103°. The respirations have been between 30 and 36, and the pulse, that was 104 at the time of admission, has risen to 114. Examination of the urine has detected nothing abnormal. The patient's face has a decided purplish flush, that, in itself, would lead one to make a provisional diagnosis of pneumonia. The pulse is not only full and rapid, but also irregular and intermittent, in spite of the fact that he is taking an ounce of whiskey every two hours. The occurrence of profuse perspiration, in association with an elevated temperature, indicates a tendency to heart-failure. The apex-beat is in its normal position, but the heart-sounds are more indistinct than an examination of the pulse would lead one to expect; what is more important, the first and second sounds are quite feeble, and of about the same length. When, in the course of any acute disease, the heart-sounds present these characters, heart-failure is not an unlikely complication. Percussion shows complete dulness over the right apex anteriorly; auscultation over the same area reveals bronchial respiration and crepitant râles. Pleuritic friction sounds are heard low down on the same side. An examination of the chest, behind, shows distinct bronchial breathing on the right side, with beginning bronchial respiration on the left. Although the examination of the chest, posteriorly, has been made quickly, the effect upon the circulation of the momentary change to the sitting position is shown by a little blueness of the capillary circulation of the body and a more feeble and rapid pulse. Evidently, then, we have here an acute, croupous pneumonia of the right apex, already well developed, and a croupous pneumonia on the left side, that is just beginning. This man denies addiction to the use of alcohol, but when a man of his age and general physical appearance develops an apex-pneumonia, independently of any other disease, you can be almost certain that it is of alcoholic origin. This fact, together with the extension of the pneumonic process to the other lung, renders the prognosis grave. It is by no means uncommon in acute pneumonia for the respirations to reach sixty per minute; and yet this man's respirations have not been over forty; at present they are about thirty-six per minute; he does not appear to suffer from dyspnœa, although, as a rule, dyspnœa is more severe when, as in this case, the pneumonia is situated at the apex. The dyspnœa of pneumonia appears to depend upon the nervous temperament of the patient, rather than upon the extent of the pneumonic process.

The condition of the pulse and capillary circulation would seem to indicate the necessity of increasing the quantity of stimulants, but experience shows that when twelve ounces of whiskey in the twenty-four hours fail to give the heart proper support, a larger quantity will rarely do more than prolong the agony. Such large quantities are of value only in emergencies, to tide the patient over a short period of great danger. Digitalis, in my experience, is not useful, and in many cases is actually harmful; nor do I favor the administration of the carbonate of ammonia. In the early stages of the disease, when the nervous system is overwhelmed by shock, opium is of great service, but later on it is contra-indicated.

I have just come from a consultation in a case of pneumonia with a well-known practitioner of large clinical experience. His whole treatment was summed up in the two words: "food and rest," and this, too, when the patient's temperature was nearly 104°. Last spring, a most interesting research was made into the mortality of pneumonia under the various methods of treatment that had been in vogue at the Massachusetts General Hospital

during the past seventy-five years. During this period pneumonia had been treated by blood-letting, by calomel and antimony, by "the let-alone" method, by the stimulating treatment, and by the antipyretic treatment; when lines were drawn to represent the mortality it was found that, notwithstanding these widely differing methods of treatment, the mortality for the seventy-five years was represented by a nearly straight line. This speaks for itself.

TUBERCULAR SYPHILIDES—PITYRIASIS VERSICOLOR—ECZEMA CAPITIS—TINEA TONSURANS—FAVUS—IODIDE ERYTHEMA.

Abstract of a Clinical Lecture delivered at the New York Post Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY AND SYPHILIS.

GENTLEMEN: The first patient brought to the notice of the class was a man, thirty-three years old, who had become infected with syphilis eight years before. He was admitted to the hospital with a patch on the right side of the face, extending from the root of the nose over the chin and under the eye. The skin was pinkish, infiltrated, and rough; the lesion was a mixture of the non-ulcerating and the ulcerating syphilide and had existed for about two months; it closely resembled lupus erythematosus. The "plugged-follicle" symptom was also present. Lupus is prone to develop in one or more discoid patches about the nose, that, fusing together, give rise to the "bat-wing" shape of the eruption, and to its name, *vespertilio*. The patient gave a history of syphilis and of treatment extending over a few months, but not long enough to eradicate the diathesis. If he had persevered in the treatment, the probabilities are that this late manifestation would not have appeared. The points of especial interest were: the late evolution, the absence of intermediary symptoms, the resemblance of the patch to lupus erythematosus, and the involvement of the follicles. The touch-stone in these doubtful cases is the treatment; in the present instance, a strong mixed treatment had produced a decided improvement.

The next case presented an eruption which, on account of its brownish color, was often mistaken for a syphilide, the case was all the more misleading to the inexperienced, as the patient had had syphilis fourteen years before, and because the eruption showed a tendency to form rings. The disease was *pityriasis* or *tinea versicolor*, a parasitic disease, that did not often form rings. In this patient the eruption was on the sternum and between the shoulders; it gave rise to no thickening of the skin. When an eruption is found distributed over the sternum and trunk to the neck, down on the arms to the wrists, and on the back between the shoulders, but sparing the latter, the case is presumably one of seborrhœa or of pityriasis versicolor. In the former the lesion appears rougher and more inflammatory; in the latter, the lesion shows no signs of inflammation, and microscopical examination of the scales would show the presence of the parasite, the *microsporon furfur*. Following the usual rule of making a thorough examination of the whole body, in the diagnosis of skin diseases, one is surprised to see about the legs, knees, and elbows infiltrated, scaly patches, that if seen independently of the patient's history, one would say were undoubtedly those of psoriasis. The diagnosis, however, in this case was a syphilide with much epidermal proliferation. The patient denied having had an eruption when a young man. Psoriasis usually begins in early life, and commonly appears in the non-syphilitic, although psoriasis may be observed to develop after syphilitic infection.

The parts affected with pityriasis should be well scoured and then washed with a solution of bichloride of mercury or of hyposulphite of soda. The syphilitic element in the case should be treated internally by a strong, mixed treatment, and the patches, after thorough soaking in an alkaline bath, should be well rubbed with the following ointment:

℞.—Oil of cade . . . . . ʒj.
Citrine ointment . . . . ʒij.
Vaselin . . . . . ʒj.

The next case was one of eczema capitis, and the child, about three years old, presented a pitiable appearance, with its face raw and oozing, and its scalp covered with pus and sebaceous matter. The condition was undoubtedly brought about by persistent washing and irritation, and usually begins in a small patch in the scalp.

The treatment consisted in correcting the acidity of the stomach by means of alkalies, and in a proper regulation of the diet. About every other day, a powder consisting of two grains each of calomel and sodium bicarbonate should be given; sometimes it is desirable to add a little Rochelle salts. After the crusts had been removed by the local application of vaselin, the following ointment should be kept constantly applied:

℞.—Camphor . . . . . gr. x.
Calomel } . . āā ʒj.
Goulard's Extract }
Vaselin . . . . . ʒj.

The attention of the class was next directed to a boy who had a number of small, shiny bald spots and scaly areas in the temporo-frontal region. The trouble dated back five years, at which time he had become infected with tinea tonsurans by wearing a schoolmate's cap. Considering the long duration, the disease had not made great ravages, but showed its characteristic pertinacity. If the disease were eczema there would be some evidence of inflammation, and in so long a time as had elapsed it would have covered the whole face. If one looked only at the bald patches, one might consider the case an anomalous one of alopecia.

The mode of infection in this case clearly pointed out the needful prophylactic measures. The curative treatment consisted in thoroughly shampooing the head and washing with a two per cent. solution of carbolic acid, after which the patches should he epilated and then painted over with the following:

℞.—Chrysarobin . . . . . ʒj.
Flexible collodion . . . . ʒj.

Proper attention to the case might be rewarded by a prompt cure.

In contrast with the foregoing, the lecturer presented a boy, nine years old, who also had a persistent disease of

the scalp. It had lasted two years, but unlike the other case, it showed no tendency to localize itself in small, circular spots. There were dry grayish-green crusts adhering closely to the scalp of the vertex and occipital region. This condition resembled that seen in only two diseases—*i. e.*, impetiginous eczema and favus. In certain places the crusts formed in the shape of a cup around the hair-follicles; on scratching the crusts they broke into powder. The crusts were at first green, but after a time they became blanched. This patient had favus, and after scratching or handling these crusts, one should be careful to thoroughly cleanse the hands, for the disease is liable to attack the epithelial structures and burrow under the nails. Favus of the scalp persisted for years, ultimately leaving the scalp almost entirely bald and converted into a large cicatrix. Favus might also occur on the body, forming the variety called favus of the epidermis. The infectious agent in this disease, the *achorion Schönleinii*, is a vegetable mould often found on rats and mice, and conveyed from them by cats and other domestic animals to persons. This parasite, like that of ringworm, burrows down into the hair-follicles, and finding a favorable nidus there, undergoes rapid reproduction.

The hair should be cut short, and the scalp thoroughly rubbed with vaselin; and wherever the crusts reappear they should at once be removed; otherwise they would be rapidly reproduced. The disease is most intractable; a cure can only be effected by the most persistent treatment. After the scalp had been thoroughly cleansed, it should be washed three times a day with a 1:3000 bichloride of mercury solution, followed by an inunction of two grains of the bichloride of mercury to an ounce of vaselin. In some cases, a strong solution of corrosive sublimate in alcohol (eight grains to the ounce) might be employed; but in all such cases one should be on the alert for toxic symptoms, which, in children, generally begin with pain in the abdomen.

Dr. Taylor then showed the results of treatment in a patient who had been presented to the class with a suspicious-looking indurated ulceration about the nose. The opinion was expressed that the lesion was a benign one, and the treatment (curetting and the application of balsam of Peru ointment) had already resulted in almost healing the spot.

The next case was instructive as showing a syphilitic eruption on one side of the face, and a well-marked iodide of potassium erythema on the other side of the face and on the forearms, that closely resembled a papular syphilide.

Locally, an ointment of equal parts of mercurial ointment and vaselin, containing one drachm of the balsam of Peru, should be applied. Internally, great care should be observed to administer only a minimum dose of iodide of potassium until the system would better tolerate the drug. Both mercury and iodide of potassium were needed; but if the latter were not judiciously administered, the cure would be delayed and the skin lesions aggravated.

Kentucky School of Medicine.—At the commencement of the Kentucky School of Medicine on June 18th, the degree of Doctor of Medicine was conferred upon 155 graduates.

CURRENT LITERATURE.

PREGNANCY AFTER CONSERVATIVE VENTRAL FIXATION OF RETROFLEXED UTERI.

SÄNGER has performed the operation of ventral fixation of the uterus nineteen times, fourteen times with removal of diseased uterine appendages, and five times with preservation of the appendages. He has had one fatal result, not due to the operation, but to septic peritonitis from pyosalpinx. The five cases in which the appendages were preserved are, of course, the only ones in which pregnancy could occur. Of these five patients one was a married woman, one a young lady of the better class, and three were unmarried working-women. The young lady, alone of the five, had not exposed herself to conception. Two of the remaining four became pregnant; the married woman a second time.

The married woman's two pregnancies following the operation took the following course: The operation was performed on December 15, 1887; menstruation ceased in March, 1889. In the early part of the pregnancy the patient had pains, evidently extending from the seat of fixation of the uterus. In the beginning of June the attending physician reported to Sänger that the uterus did not seem to grow directly upward, but seemed to be held at the points of suture. Discharges of blood occurred repeatedly. In August the patient aborted at the sixth month of her pregnancy. The macerated fœtus corresponded in size with a three months' fœtus. Six weeks later, when Sänger saw the patient, she was entirely well; the uterus had become involuted, and was anteverted as before.

In the second pregnancy the last menstruation occurred April 20, 1890. The first movements of the child were felt September 7th. Sänger saw the patient in the sixth month of her pregnancy. She had no complaints of any kind, and had had no bleeding. The pregnant uterus, as regards position, form, and movability, in no respect differed from a normal uterus. On February 7, 1891, the patient was delivered of a dead fœtus by version and extraction. In the latter part of her pregnancy she had complained much of pain in the abdomen and sacrum; ate but little, and for this reason was extraordinarily weakened. According to her reckoning, she was eight days over her time when the waters began to escape. In the last few days fever set in; the fœtal movements were not felt for three days before delivery; through the membranes the cord could be felt still feebly pulsating, but the child was dead when born.

The second patient had had a child four years before the operation of ventral fixation of the womb, which was performed June 21, 1888. Menstruation failed to appear in the beginning of October, 1888, about four months after the operation. A boy was born at full time, without artificial aid, July 1, 1889. The puerperium was normal. Six months later, when the patient was seen, the scar in the abdomen showed a slight separation; the uterus lay as before, anteverted, and, without having been loosened from its fixation, was entirely movable.

Sänger discusses the two pregnancies of the first patient, and shows that neither the abortion in the first pregnancy nor the death of the fœtus at full time in the second is to be attributed to the operation of ventral fixation. He then refers to the following reported cases in which pregnancy has occurred after this operation: Olshausen reports a case in which pregnancy was uninterrupted and birth ran a normal course. Klotz has operated sixty-two times; he has had two normal births with subsequent normal position of the uterus, and one normal pregnancy is still under observation. In eighty-one cases of vaginal fixation of a retroflexed mobile uterus, he has observed three normal labors and has had five normal pregnancies under control. Two of Leopold's nineteen cases have had normal pregnancies and delivery.[1] Pozzi and Baudouin report a case of Routier's in which pregnancy and delivery were normal, and the uterus maintained its fixed position. Vlaccos refers to a case of pregnancy following "hysteropexy." One patient of the six cases reported by Jacobs was in the sixth month of undisturbed pregnancy. Gottschalck reports a case in which hemorrhage and abortion occurred in the pregnancy, and attributes them to the ventral fixation. Sänger does not agree with him.

Sänger discusses the operation of ventro-fixation and its various modifications, and maintains his preference for his own method in conservative ventral fixation. By "conservative" fixation he means fixation with preservation of the appendages of one or both sides, no matter whether the uterus has been movable, wedged in, or fixed; while by "pure" ventro-fixation he means the operation when the uterus is completely movable and both appendages have been preserved.

Since conservative ventral fixation not only most certainly obviates the backward deviation of the womb, cures the disturbances associated with it, and relieves the patient forever from the pessary treatment, while it also does not hinder conception and leads to no disturbance of pregnancy and childbirth, even the puerperium being passed without drawback, Sänger concludes that the operation will at least preserve its appropriate place by the side of vaginal and other operative procedures for the treatment of the retroflexed uterus with normal appendages.

The effect upon conception and pregnancy is at all events the best standard by which to judge of the problem of the artificial antefixation of the retroflexed uterus.—*Centralblatt für Gynäkologie*, No. 16, 1891.

THE DIGESTIVE POWER OF THE ACIDS.

VARIOUS theories have been advanced as to the action of the various acids during the process of digestion. Most of the physiologists believe that hydrochloric acid is the only true acid of the gastric juice, the others being formed from the contents of the stomach and mixing themselves with the former. Some even believe that these other acids are hurtful, and that the function of the hydrochloric acid, in conjunction with the pepsin, is not only to peptonize the albuminoid substances but also to hinder, by preventing fermentation, the formation of lactic, acetic, butyric and other acids, the presence of which weakens and may even completely stop stomach digestion. Alongside of these theories is that of others diametrically opposed, who attribute all the digestive power to the organic acids and to lactic acid in particular. These results have been arrived at by two methods: (1) the examination of the digestive action of a natural gastric juice, the acids of which have been previously determined; (2) artificial digestions in glass tubes, the artificial gastric juice being formed by adding together pepsin and the acid the digestive value of which it is desired to determine.

From his researches in this direction Dr. Georges drew the following conclusions upon the peptonizing action of the acids of the stomach: (1) Hydrochloric acid is the acid which, combined with pepsin, is commissioned with the peptonization of albuminoid substances. (2) Lactic acid, as well as acetic and tartaric acid, are totally deficient in digestive action.

Thoyer having had occasion during the course of the year to make some observations upon this subject, has not been able to confirm the latter conclusion. His experiments have been conducted with every possible precaution and with the greatest care, and he believes that the results obtained are entirely trustworthy. These researches have been of three kinds: (1) The action of acids alone upon the albuminoid substances. (2) The action of pepsin taken singly. (3) The combined action of pepsin and the acids. Various acids were employed—hydrochloric, hydrofluoric, sulphuric, nitric, lactic, acetic, tannic, tartaric, oxalic and citric. These were placed in test-tubes, together with small cubes of hard-boiled white of egg and some filaments of fibrin, and allowed to remain for twenty-four hours in an oven at a temperature of 38° C. At the end of that time the digestions did not appear to have commenced in the tubes containing the white of egg; in the tubes containing fibrin the dissolution of the fibrin was complete, but in neither was found the slightest trace of peptones. This proves that the acids which are contained normally in the stomach, as well as others which may be accidentally discovered there, have not in themselves any peptonizing action. The acid pepsin of Boudault placed in tubes with the white of egg, hard-boiled, and with fibrin, has determined the formation of peptones. If, however, the pepsin is chemically pure, the slightest trace of peptones cannot be found in either the tubes of fibrin or white of egg after remaining twenty-four hours in the oven at 38° C.

In testing the combined action of acids and pepsin, acid solutions of from four or five, ten or twenty, or thirty parts to a thousand have been employed. The pepsin employed was perfectly pure. The experiments were conducted in the following manner: In one series of test-tubes ten cubic centimetres of the precipitated acid solutions were placed, and to

[1] A third case is reported in the Centralblatt für Gynäkologie, April 18, 1891.

these were added two centigrammes of pure pepsin and a cube of one gramme of the white of a hard-boiled egg. In a second series of tubes were placed fifteen cubic centimetres of the same acid solutions, then five centigrammes of pure pepsin and a two-gramme cube of white of egg. Finally, two other series of tubes contained the same quantities of acid solution and pepsin, and one- and two-gramme quantities of fibrin. The results obtained justified the following conclusions:

1. Hydrochloric acid is the acid that, when combined with pepsin, has the most power for transforming albuminoid substances into peptones.

2. Hydrochloric acid does not alone possess the peptonizing property; with it, but to a much less degree, a large number of acids may, when combined with pepsin, give rise to this transformation of albumin into peptone. Among these acids are sulphuric, acetic, oxalic, tartaric, citric, lactic, and hydrofluoric, which possess this property in different degrees.—*Soc. de Biologie*, No. 6, 1891.

METHYLACETANILIDE, OR EXALGIN.

IN the *Bull. Gén. de Thérapeutique*, No. 6, 1891, DESNOS has made a study of the merits of this drug. He says that the chemical formula of exalgin confirms the law established by M. Dujardin-Beaumetz, to wit: that the anti-thermic action will be especially developed in amidogenous derivatives, whilst the analgesic property will be at its maximum in the amidogenous bodies in which for one molecule only of hydrogen, one molecule of a primitive fat, especially of methyl, has been substituted. Exalgin presents itself in the form of a white powder, consisting of long, fine needles, absolutely tasteless, soluble in warm alcohol and in boiling water, but slightly soluble in cold water to which a small proportion of an alcoholic fluid has been added. The physiological effects produced by it in man are very interesting. The action of the drug seems to be entirely exerted upon the bulb and the cerebro-spinal system. Prominent in the impressions produced upon the brain is vertigo. The numerous varieties in which this presents itself are interesting. Sometimes, and this is most frequently the case, very quickly after the ingestion of the drug the patient complains of a slight mist, as of a veil stretched before the eyes, and this is all. This sensation may be fugitive; its duration is very variable, oscillating between five minutes and a half hour. Sometimes the patients have a sensation of rotation within themselves, or yet it is the surrounding objects which appear to them to revolve around them. In a woman it seemed that her bed sank into the floor, another believed that she was incessantly falling to the side of her bed, and one even grasped the opposite side of the bed to escape falling. These extreme cases are very rare. In general the patient is able, notwithstanding the vertigo, to rise and walk. As a rare exception the vertigo is accompanied with vomiting, and also rarely with chills or cold sensations. In certain patients, but rarely, the vertigo coincides with tinnitus aurium, or this may be replaced by heaviness of the head or by cephalalgia, by a tendency to sleep, or simply a state of torpor, which two patients compared to that in which they had previously been thrown by injections of morphine. Nevertheless, it should be remembered that exalgin is no more a hypnotic than it is an anti-thermic. If the patients sleep, it is because the drug has freed them from the pains which had kept them awake. Some other phenomena reveal an action upon the cord and spinal nerves. Thus, sweats are encountered which may be general and profuse, or limited at times to one region of the body, generally to that portion which is the seat of the malady for which the exalgin is administered. Thus, also, frequently tinglings are experienced, extending to all the members and the tongue, or solely to the points where the neuralgia exists. Some patients complain of flashes of light before the eyes.

All doses may provoke these nervous phenomena. Three and three-quarter grains may suffice, but it is generally when eight and a half grains have been injected that they may be observed. Then, again, large doses, eleven or twelve grains, may fail to produce them. In this dose, however, cyanosis may be observed, though of slight intensity, and not in any manner resembling the cyanosis of grave disease of the heart. The appearance of the free border of the lips is scarcely modified, and upon the skin of the upper and lower lip, and upon the naso labial ridge, a slight grayish-blue tint may be observed. This coloration is not of long duration, usually disappearing on the next day. An examination of the blood of patients to whom exalgin has been administered reveals an alteration of the globules, which seem to be almost, if not completely paralyzed, so that the gaseous changes are not carried on in the proper manner. There is also a diminution of the oxyhæmoglobin. Exalgin, therefore, has the property of giving rise to anæmia, although this is not a property exclusively belonging to it, but one that is shared by the other anti-thermic nervines. One of the interesting points in the administration of exalgin is the ease with which it is tolerated by the digestive tube. It does not engender any troubles of the stomach or intestines.

As to the dose of the drug, three and three-quarter grains at times suffice to produce a curative effect, complete and lasting. More than this should never be given at a time, but if need be the dose may be increased to two or three times this amount during the twenty-four hours. As M. Gandineau has shown, a tolerance for the drug may be established, so that in giving successive doses it may become necessary to increase the amount given. The affections in which exalgin is of the greatest service are the neuralgias, especially the facial neuralgias, involving one or several branches of the trigeminal, or the occipital nerve, especially if these are of congestive origin from cold or rheumatism. The anæmic neuralgias are, without doubt, very favorably influenced by exalgin. Intercostal neuralgias have been benefited, as also have been neuralgias of the various plexuses, and the ilio-lumbar pains consequent upon uterine and ovarian disease. The visceral neuralgias,

angina pectoris, and nephritic colic are benefited, as are also painful and hysterical menstruation. The tremblings of paralysis agitans may be controlled by its use.

PARTIAL NEPHRITIS.

Cuffer and Gastow, as long ago as 1887, wrote that simple interstitial nephritis could be cured entirely or partially, the inflammatory process localizing itself in some portion of the kidney, and this morbid condition being recognized by the constant presence in the urine of a small amount of albumin. In the desire of ascertaining more explicitly the significance and prognostic value of this albuminuria, which, in spite of every possible care, persists in an unvarying quantity in patients otherwise apparently cured, the same writers instituted a series of investigations as to this apparent anomaly, the results of which they have published in the *Revue de Médecine*, No. 2, 1891. They find that the condition is of more importance than would at first sight appear. Relying upon the modern theories it might readily be believed that one had to deal with a physiological or intermittent albuminuria or with an albuminuria of sanguineous or dyscrasic origin. Such, however, is not the opinion of Cuffer and Gastow. They have found that the permanence of the amount of the albumin is the consequence of a permanent lesion of the kidney, of a nephritis which has become partial, with a prognosis much less grave than the persistence of a notable quantity of albumin in the urine would seem to warrant. Their conclusions have been based upon clinical facts entirely, all anatomico-pathological proofs being wanting.

When, they say, in the course of a parenchymatous nephritis one sees, under the influence of a well-directed treatment, all the symptoms disappear, save a certain degree of albuminuria, it is useless to persist in combating this albuminuria from the moment that the rate of the albumin remains constant, no matter what may be the methods employed to cause its disappearance. The nephritis may be regarded as cured whenever all the serious symptoms have disappeared. The albuminuria which persists has an important semeiological significance, in the sense that it indicates a renal lesion, the gravity of which will depend largely upon the existence of the other symptoms that should be taken into account, either œdema or uræmia. Consequently, a persistent albuminuria of a fixed degree, while all the other symptoms have disappeared, indicates that the renal lesion is limited, that the nephritis has become partial. It does not present any gravity, it does not necessitate any continuation of the initial treatment, because if there remains a lesion it is no longer evidence of disease, and the lesion is nothing more than a sort of incurable infirmity. From the therapeutic point of view, these patients have nothing more to do than to exercise proper precautions in the management of this feeble point in their organism. All treatment in this condition becomes useless, and in consequence it may even become hurtful. Now, what is the nature of this albumin? To what should it be attributed? Is it the albumin of the blood, or of serum, or is it a pseudo-albumin? Is it peptonic in nature? Is the albuminuria physiological, intermittent, of a dyscrasic origin, mechanical or nervous? It is not due to peptone or to pro-peptone, because nitric acid and heat produce in the urine of these patients an opaque precipitate of albumin, a precipitate which never is produced with peptones and pro-peptones, the reactions of which are quite different; it is an albumin occasioning all the characteristics of the albuminurias of renal origin. The idea of physiological albuminuria cannot be readily entertained. The patients give a history of an infectious disease, possibly, which has produced a nephritis, usual under these circumstances—a nephritis which has always persisted, since it has not ceased to be characterized by the presence of the albuminuria. This albuminuria is not intermittent, either. It always exists; it is persistent at a fixed or nearly fixed degree, which is not characteristic of an intermittent albuminuria. No more can it be explained by ascribing it to a dyscrasic cause. The patients have not been poisoned, nor are they anæmic, or carcinomatous, or tuberculous. No mechanical reason can be found; no cardiac lesion, no active or passive congestion of the kidney. No arterio-sclerosis exists to explain its presence. It remains, therefore, to explain the persistent albuminuria by the presence of a persistent lesion of the kidney, a nephritis. The whole parenchyma of the organ is not involved; all is not sclerous. There are some healthy renal lobules alongside of others which have been nearly entirely destroyed. This nephritis may remain partial for a long time. It may have subacute or acute exacerbations, each time leaving a little less of the renal tissue to perform the work. In this way some of the glomerules will be entirely destroyed, while at other points there will exist simply a catarrhal desquamation. The patient will remain, therefore, infirm in one portion of his kidney.

The conclusions drawn from these studies are:

1. Whenever nothing will explain the persistence of a fixed and constant degree of albuminuria; whenever none of the therapeutic measures employed against this albuminuria succeeds, while notwithstanding, the patient is enjoying good health, it is necessary, if he has had previously all the symptoms of an acute nephritis, to think of a partial nephritis.

2. It is not necessary in these cases to make even a grave prognosis when the urine contains a considerable quantity of albumin (thirty to sixty grains). The patient is an invalid, but may live, on the condition that he observe certain precautions.

3. It is not necessary to confine these patients to their rooms, to submit them to a severe regimen and milk diet. This will result in anæmia and useless debility. No kind of alimentation has any influence upon the amount of the albumin in the urine.

4. It is necessary that they avoid all chilling and errors of regimen.

5. They must avoid all renal irritation. All medication liable to react upon the kidneys must be

banished. The astringents will be of great service in such patients.

6. If they are attacked with an infectious disease, care must be taken to guard against any renal congestion.

THERAPEUTICS OF SYPHILIS.

Dr. E. Kreis, of Zurich, says that, in spite of new methods and new remedies, we are still far from an ideal treatment of syphilis, one which will remove completely the syphilitic virus from the organism without injury. He first discusses the so-called abortive treatment by excision of the chancre.

Neisser believes that it is possible to check the outbreak of syphilis by excising the chancre. Jullien's belief, based upon a series of experiences, is that syphilis may be delayed in its course, or at least weakened, by excising the chancre. In one of his cases the patient had a chancre removed in 1880; he remained under careful observation free from syphilis for four years, and then died of typhoid fever. Another patient, who was operated on in 1881, has remained healthy to the present day. A third patient became reinfected with syphilis seventeen months after the first primary sore had been excised. Leloir's first experiences led him to declare excision of the chancre useless, but upon investigating the question afresh he obtained positive results. The following case is especially noteworthy: He excised a chancre in 1884, twenty-four days after the coitus in which infection had occurred. Subsequently there was slight cicatrization, with no induration, no swelling of the glands, and later no symptoms of syphilis. The very careful observation of this case extends to the year 1888. On the other hand, Neumann, Ricord, and Von Sigmond do not favor the method, and Ricord declares that the destruction of the primary sore is absolutely useless. Unna and Auspitz, however, have revived the treatment. Kreis thinks that at present we must conclude that excision of the chancre cannot abort syphilis. Nevertheless, he regards the operation as not only justified, but indicated for certain cases—if only to give a positive answer to the question and to adduce proof that the chancre is to be regarded as the local action of the infection and not as the expression of the general disease. The indications for the operation are: (1) absolute certainty of diagnosis; (2) operation as early as possible, before the lymphatic glands have been infected; (3) that the chancre should be typically formed and appear completely separated from the surrounding parts, so that it may be removed *in toto* without infecting the neighboring tissue.

A second question in dispute is as to the time when the general treatment of syphilis should begin—whether with the occurrence of the primary sore, the so-called preventive treatment, or with the occurrence of the secondary symptoms. Fournier, Mauriac, Jullien, Schwimmer, and others hope, by early mercurial treatment of the patient, to prevent secondary symptoms; or, if these should set in, to make the course milder. Doutrelepont, Köbner, Kaposi, Unna, and Neisser, on the other hand, take the position that the primary treatment generally fails to defer the timely appearance of the secondary symptoms, and that the latter often occur more obstinately and severely. Kreis agrees with Neumann in opposing early treatment. He says he has seen after it extremely obstinate affections of the mucous membranes of the mouth, and the occurrence of premature iritis, skin affections being absent. He thinks early treatment appropriate only for large chancres difficult to heal.

A third question of great importance is as to the most appropriate form and combination of mercury in the treatment of syphilis. Kreis concludes that mercurial ointment gives the greatest therapeutic effect with the least detriment. It may be employed as in the usual inunction "cure," or in the form of a soap containing metallic mercury, or in the form of a mull, as recommended by Unna. They are all only different methods of applying mercurial ointment, and are nearly uniform in their activity. The use of the *ung. cinerei* represents the best, most active and most permanent "cure."

How long should the mercurial treatment continue? Fournier especially has called attention to the fact that those cases which were not sufficiently treated, or which were treated for too short a time, were often followed by severe tertiary manifestations. He therefore thinks that the treatment of syphilis should be continued for at least three or four years; recently he has made the time still longer. Lang, Diday, Caspary, and Köbner combat the long-continued mercurial treatment, and maintain that such treatment leads to serious injury to the organism, both to the digestive organs and the central nervous system. Neisser is in favor of long-continued, but intermittent, treatment. Kreis regrets that we lack statistics of cases extending over a long time; these would give us the necessary light by which to decide the question. All cases, however, should not be treated according to the same plan.

He concludes that, though the present treatment of syphilis does not enable us to cure every syphilitic permanently, yet we can by proper treatment always get rid of the symptoms again. We must in most cases consider syphilis an absolutely curable disease, and always a relatively curable one.—*Correspondenzblatt für Schweizer Aerzte*, No. 5, 1891.

"I wish that we could begin again, start from our present position and long experience to take a deeper insight into human suffering. It would be a compilation of records of what we had journeyed through with our own fellow-creatures, and with a view of seeing how the suffering and misery are to be got rid of. There should be a rational therapeutics derivable from pathological teaching; but it cannot be gained by merely looking at lower agencies, which are disintegrating and crumbling to pieces, and which cannot develop into greater and higher usefulness. But see, rather, how we come to miss the greater constructive powers, and in missing them become conscious of failure and disappointment. In other words, a more practical pathological teaching is called for."—Dr. H. G. Sutton.

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THE NOMENCLATURE OF PTOMAÏNES, LEUCOMAÏNES, ETC.

IF one attempt clearly and sharply to define the terms ptomaïne, leucomaïne, animal alkaloid, toxine and toxalbumin, he will find that not one of them can be defined so that it is accurately delimited from the others, either as to origin or as to qualities. The best authors are not at all agreed as to the definitions that should be used; all complain of the defects and vagueness of any classification or definition. Take the word about which there is the least doubt: a ptomaïne is said to be a putrefactive alkaloid, a product of katabolic tissue-metamorphosis under the influence of bacterial agency. From its root and derivation a ptomaïne should be found only in the dead animal body, πτωμα meaning a cadaver; but ptomaïnes may be formed in the living as well as in the dead body. The name is, therefore, the outcome of a mere accident on the part of the first discoverer, and with scientific research has become a misnomer and misleading. SELMI should have designated these substances from an essential, not from an accidental factor of their origin. The chemical changes that take place in the cavities of the body may be quite as removed from the action of the living tissues of the body as if they occurred in a dead body miles away. In attempting to clear up the indefiniteness surrounding this subject BRIEGER has greatly increased it. He has proposed still to call the non-toxic basic products ptomaïnes, but designates as toxines those that are poisonous. Again an accidental instead of an essential etiological or qualitative fact is made the basis for a name. Some of the ptomaïnes are innocuous, some only slightly toxic, some intensely so, some harmless in single or moderate doses, some cumulatively toxic, or poisonous in large doses. The term toxine, if employed at all, should comprehend any toxic alkaloid whatever. As used by BRIEGER it is inaccurate. In the same way the word leucomaïne is incorrectly applied to substances analogous to ptomaïnes, but formed in the living instead of in the dead body; but if ptomaïnes are basic alkaloidal substances that may be formed in the living body, and leucomaïnes are precisely similar substances also formed in the living body, the definitions evidently overlap. A ptomaïne may be a leucomaïne, or *vice versa*. The confusion becomes greater when it is added that leucomaïnes may be products either of fermentative (or microörganismal) action or of physiological katabolism. The term animal alkaloid is sometimes used instead of ptomaïne, but is defective, as VAUGHAN and NOVY have pointed out —in that these substances, or some of them, may be produced in decomposing vegetable matter.

As if the confusion were not yet great enough, BRIEGER and FRAENKEL have proposed the term toxalbumin to designate those toxic proteid substances formed within the living body as a result either of fermentative changes or of normal katabolism. Now, "while it is true that some belong to the albumins, others are more truly albumoses; others are most closely related to the peptones; and still others differ in some important respects from all these."[1] Again an accident furnishes a name that renders all distinctions impossible, whilst the name itself in several respects implies positively incorrect descriptions.

It thus becomes apparent that further use of these terms, especially those latest invented, must be given up. The indefiniteness is already so great that but few specialists, even, have a clear grasp of the distinctions attempted to be conveyed by the over-

[1] From advance sheets of the new edition of the work of Vaughan and Novy, kindly furnished by the authors.

lapping and misleading definitions, with their implications of false etiology, doubtful origin, and erroneous qualities and connotations. Our best authorities, DRS. VAUGHAN and NOVY,[1] have sought to obviate these misdefinitions and misunderstandings, by substituting for the criticised terms the term "bacterial proteids," to designate those proteid bodies formed by the fermentative action of germs, while those constituting an integral part of the cell are named "bacterial cellular proteids." In one sense this is a move in the right direction, but in another it seems much like piling Pelion upon Ossa. All the products of bacterial action in the economy are not proteids. Non-bacterial pathological katabolic products are left unnamed and unclassified. It would seem wiser to dispense entirely with the old nomenclature, and if possible start entirely anew.

not all anabolins are quite certainly physiological products of the constructive processes of life and health. The katabolins are to be divided into—first, the normal, or those that are the natural and necessary products of healthy tissue-katabolism; and, second, the pathological, or those resulting from microbic influences, or abnormal processes, whether in living or dead bodies. The last group, of course, comprises all those heretofore classed as ptomaïnes, leucomaïnes, toxines, and toxalbumins, and is to be subdivided into two chief classes—the autogenetic, or those the products of non-infectious or non-bacterial morbid processes, and the heterogenetic, or germ-produced. The accident of toxicity may be expressed by the adjective toxic, or by the compound toxikatabolin. The accident of origin in living or dead tissues is readily indicated by adjectives or easily-formed compounds.

- **METABOLINS.** Products of metabolism from the inception of ingesta to their decomposition end-products.
  - **ANABOLINS.** Products of anabolic activity; substances of progressively increasing complexity.
    - NORMAL.—The natural products of healthy, retrograde tissue-metamorphosis.
  - **KATABOLINS.** Products of katabolic processes; substances of decreasing complexity.
    - *Toxic or Non-toxic.*
    - *Alkaloidal or Basic.*
    - *Microbic.*
    - *Albuminoid.*
    - *Nitrogenized.*
    - *etc. etc.*
    - AUTOMICROBIC.—The excretory products of the bacterium.
      - Varying with food and media, toxic or non-toxic, pathologic or non-pathologic, etc. etc.
    - PATHOLOGIC.
      - AUTOGENETIC.
        - Produced by non-infectious or non-microbic morbid processes.
      - HETEROGENETIC.
        - *a.* Substances produced by the action of the parasite upon the tissues or media, or by the reactions of the tissues or media to the microörganismal irritant (*ptomaïnes, toxines, etc.*)
        - *b.* Substances produced by the reactions of the tissues or media to automicrobic katabolins, or by mixtures of Class *a* and automicrobic katabolins.

The most essential, fundamental, and characteristic fact about all these infinitely various substances is that they are metabolic products, whether physiological or pathological, self-produced, or germ-produced, toxic or not, etc. Why not, therefore, designate them by the generic term Metabolins—subdivisible, of course, into anabolins, or those metabolins with increasing complexity of construction, and katabolins, or the metabolins of the descending series. These terms are neutral and colorless so far as concerns possible false implications, and while they are comprehensive, if used with qualifying terms they seem sufficiently designatory.[1] Most if

This scheme apparently leaves out of consideration the products of microörganismal activity in artificial culture-media, and also the exclusively excretory products of the bacteria themselves, as distinct from the consequences of their action upon the living tissues, or the reactions of the living tissues to the bacterial irritation. In answer it may be said that microörganismal products arising in artificial culture-media differ in no essential property from those produced in the culture-media of ante-mortem or post-mortem animal tissues, and they may very properly be included among the microbic or heterogenetic katabolins. They might be called artificial katabolins. As to the exclusively excretory products of microörganisms, they are also truly katabolins, and may, if desired, be called

[1] Loc. cit.

[2] The terms Metastate, Anastate, and Katastate were devised for and have been used to represent purely physiological products.

microbic-excretory or automicrobic katabolins. It goes without saying that about these questions a world of mystery awaits clearing up, and all that can be done is to adopt a nomenclature that does not stifle investigation and confuse the mind.

A schematic view of the nomenclature here recommended is given on the opposite page.

THE SUMMER CARE OF INFANTS.

"The melancholy days have come," the saddest in the calendar of infancy, when the sterilizer, the intestinal antiseptic, and the patented and infallible food hold sway. With that constant tendency so long observed in medicine, the pendulum is slowly swinging from the extreme of antibacterial prophylaxis to a reconciliation between old usages and new theories. The first to make sterilization popular, Soxhlet, in recent numbers of the *Münchener medicinische Wochenschrift*, announces modifications in sterilization, doing away with stoppers, substituting for them thin sheets of rubber to be tied over the bottles; the expansion of the rubber permits the exit of gas set free during heating. He does not find sterilized milk the universal food so long sought, but in common with Leeds and others he has observed that in some cases fat is so emulsified by sterilization that the milk becomes less digestible. All observers look to reforms in dairy hygiene and milk-producing for the next substantial advance in securing a suitable food for infants. In this connection the suggestion of Brush, to separate as far as possible the production of milk from the breeding of cattle, is a wise one. Under circumstances favorable for the growth of noxious bacteria, prolonged sterilization and intestinal antisepsis are of proved value, and the field for future study in this, as in so many other departments of medicine, lies in separating noxious from innocuous bacteria, and in a better knowledge of the means for destroying the one and utilizing the other. In brief, in hospital and city practice, during the heated term, sterilized milk, intestinal irrigation, and antisepsis, with stimulation and supplementary feeding, will prolong the lives of foundling and artificially-fed infants until they can be taken into the country or until cooler weather returns. For infants born of healthy parents amid good surroundings, scrupulous cleanliness and regular feeding, under the guidance of that rare scientific faculty, common sense, with an outdoor life, are in the majority of cases sufficient.

Sterilized milk, although usually unnecessary, may at times agree when nothing else will. The golden maxim remains, in spite of bacteria and ptomaines, that that which nourishes the human being is proper food, that each individual is a law to himself, and that only patient observation can read that law.

THE RECENT EXECUTIONS BY ELECTRICITY.

The officers of the law charged with the recent execution of the four criminals at Sing Sing, N. Y., have done their unpleasant work with most commendable skill and judgment. It was exceptionally necessary in the present case that there should be no bungling of any sort. Everyone felt that mistakes might naturally occur in the first trial of the novel method of execution, but that in these later cases the decisive test was to be made. It now appears that dispassionate minds are generally in agreement that, granted the frightful necessity of capital punishment, a great stride out of barbarism and brutality has been made with the adoption of the new method of execution by elcctricity. There seems to be nothing to add to the carefully weighed judgment of Dr. A. D. Rockwell, of New York, who was present at the execution and post-mortem examinations. In a letter written The News July 8th, Dr. Rockwell says: "The executions on Tuesday demonstrated to the satisfaction of myself, as well, I think, as of all others present, that no method for the disposition of criminals condemned to death could better meet the requirements of decency and efficiency, and that it ought to supplant everywhere the barbarous process of hanging. Through electricity death comes instantly, painlessly, and unattended by mutilation, convulsions, or any distressing outward manifestations of pain. Post-mortems after death by electricity invariably reveal the fact that no gross lesion or rupture of tissue has taken place. The nerve-centres and heart are instantly paralyzed, and life ceases."

"Twenty years ago we were steering well and steadily toward great principles on the preventive as well as the curative side of medicine; then there crept in the wild enthusiasm for bacteriological research—research good enough in its way as a piece of natural history and as disclosing some curious vital phenomena developed under morbid states of the organic structures and the blood, but a positive insanity when accepted as the one absorbing pursuit, restoring the humoral pathology, ignoring nervous function, leading to Babel with its utter confusion of tongues, and separating for a time our modern art of cure from the accumulated treasures of knowledge, wisdom and light of over two thousand years."—Dr. B. W. Richardson.

REVIEWS.

Philadelphia Hospital Reports. Volume I., 1890. Edited by Charles K. Mills, M.D., Member of the Neurological Staff. Large 8vo., pp. xii., 353. Philadelphia: Detre & Blackburn.

Both scientific and clinical medicine are to be congratulated upon the step taken by the Medical Board of the Philadelphia Hospital in so wisely imitating the example of the large general and special hospitals of Great Britain and Europe, by bringing before the medical profession at large the representative work of its members in a collective form, instead of allowing the great wealth of its recorded material to be scattered throughout medical journals in such a desultory way that no adequate idea of the real amount of work done in such an institution can be obtained by anyone not actually acquainted with the staff.

This, the first volume, which has been under the judicious care and watchful eye of Dr. Mills, contains a most interesting account of "The Medical History of the Philadelphia Almshouse," by D. Hayes Agnew, M.D., followed by two facetious and happy addresses by Alfred Stillé, M.D., in which the historic Blockley cockroach is mentioned. After a contribution upon numerous historical memoranda by the editor, come twenty-five important articles on medical subjects, founded on work done in the hospital wards by various members of the staff. These embrace the results of anatomical studies, experimental research and clinical diagnosis, with the effects of both surgical and medical therapy in nearly every department of medicine. A few brief accounts of the most important epidemics occurring since 1862, by Dr. R. G. Curtin, practically closes the book.

Of course, in the initial volume of such a series of reports, much that is descriptive and reminiscent has been inserted; this should always be when there is so much to interest and so much to show the progress of practical medicine in a large charitable institution like the Philadelphia Hospital. It is to be sincerely hoped that enough fresh clinical material and sufficient additional historical data may soon be obtained to permit of the early appearance of a second report.

A Treatise on the Diseases of the Nervous System. By William A. Hammond, M.D., with the collaboration of Græme M. Hammond, M.D. Illustrated. Ninth edition. New York: D. Appleton & Co., 1891.

There are few books, even upon those subjects which are constantly in the ordinary physician's mind, which succeed as has that of Dr. Hammond; and when we recollect that when the first edition of this work appeared, neurology in America was in its very infancy, the rapid exhaustion of its editions is the more remarkable. In the ninth edition the writer's son has done much toward keeping the work abreast of the times, and, with more confidence than ever, it can now be regarded as one of the best and most satisfactory works on nervous diseases, either for the practitioner or for the advanced student. The book is beautified and its usefulness increased by a larger number of illustrations than heretofore—among the best from a medical point of view being those representing syringo-myelia, which have been taken from the studies of Van Giesen. In the article on tetanus the microbic nature of the disease is dwelt upon at very proper length, but the fact that tetanus is sufficiently contagious to require isolation is not stated, while the possible influence of certain soils which are capable of causing the disease, by reason of the germs which they contain, is also ignored. In regard to hydrophobia, so called, Dr. Hammond thoroughly believes in its existence, and also asserts that the bite of a healthy animal, such as the dog, may produce the disease in man. In regard to Pasteur's treatment, the author says that if he were bitten he would prefer to rely upon the cautery rather than upon inoculation.

A Compend of Equine Anatomy and Physiology. By William R. Ballou, M.D., Professor of Equine Anatomy and formerly Lecturer on Physiology, New York College of Veterinary Surgeons; Instructor in Genito-urinary Surgery, New York Polyclinic; Surgeon, Bellevue Dispensary; late House-Surgeon, Bellevue Hospital, New York. With 29 graphic illustrations, selected from Chauveau's *Comparative Anatomy*. Philadelphia: P. Blakiston, Son & Co., 1890.

This anatomical and physiological *résumé* is admirably adapted to the purpose for which it is designed. Containing all the essential points of the anatomy of the horse, it may be consulted in the dissecting-room by those preparing for examination, and for hasty reference afterward. As its author explains, the book is mainly a compilation, and we add, it is well arranged and the work done with great thoroughness. The nomenclature, where practicable, is that adopted by the general medical profession. The only thing omitted is a mention of the principal anatomical differences between different species of domestic animals, a brief enumeration of which should perhaps form a part of a work of this kind. Since it is especially intended for veterinary students, it would be well to incorporate these in a later edition.

Practical Notes on Urinary Analysis. By W. B. Canfield, M.D., Lecturer on Clinical Medicine, University of Maryland. [Physician's Leisure Library.] Detroit, Mich.: George S. Davis, 1891.

In this little monograph the author has collected and well arranged all that is known concerning urine analysis up to date. The field has been so thoroughly and carefully covered that the only claim for this work can be, that the latest tests, such as the trichloracetic acid test for albumin, and the phenylhydrazin and indigo-carmine tests for sugar, are fully elucidated. The author describes the normal as well as abnormal constituents of urine, and also the various bodies found in the sediment.

The urine of fever, of acute and chronic nephritis, of contracted and amyloid kidney, of diabetes, uræmia, cystitis, and calculus, is carefully considered. One great merit in the book is its condensed form, the practitioner being able to find at a glance, without wading through a lot of more or less useless matter, what he may desire. The plates, especially those depicting sediments and the various kinds of casts, are very well drawn.

As a ready-reference book for instantanous use, this little volume will be of much service.

Digestion and Diet. By Sir William Roberts, M.D., F.R.S. Pp. 261. Philadelphia: Lea Brothers & Co., 1891.

It is only when the physician is brought face to face with a case of disordered digestion that he finds himself wishing either that his memory concerning physiological functions were better, or that in college days his teacher had more clearly shown the practical distinctions between normal and abnormal preparation of food for assimilation. To all those who feel puzzled when dealing with such cases we recommend this book. It contains so much valuable information, and so succinctly sums up the most recent views in regard to digestion and indigestion, that it affords a reliable guide of a convenient and readable size. In some respects the book resembles that of Brunton upon a similar subject which contained papers read or addresses made before learned medical societies on those subjects, and which some years ago was so deservedly popular.

The Care of the Eyes in Health and Disease. By D. N. Skinner, M.D. Boston: J. G. Cupples & Co., 1891.

This little book discusses in a popular manner the anatomy and physiology of the eye, the defects of vision and their treatment by spectacles, some of the common diseases of the eye, suggestions in regard to the care of the eye, and the result of school life upon the visual organ. There is nothing very original in the book, but it certainly is a conscientious statement of the subjects which have been mentioned, and might with profit be read by the general practitioner, and be placed in the hands of those who have children under their care, especially children in their early school years. For the most part the advice given is sound, and stated in such a manner that anyone, be he layman or doctor, may read it with profit.

"Joe Brown," Doctor, on Alcoholism: Its Cause and Cure. New York: E. Scott, 1891.

This anonymous publication of one hundred and five pages presents a vivid picture of the horrors of alcoholism. The alcohol habit is considered a disease. The author, in his zeal, errs in denying alcohol any medicinal properties. The remedy recommended for the habit—abstinence and forced nutrition—is rational and practical. The little work is clearly a "temperance" document, and its force is somewhat weakened by the evident bias that pervades it.

Medical Symbolism in Connection with Historical Studies in the Arts of Healing and Hygiene. By Thomas S. Sozinsky, M.D., Ph.D., etc. Illustrated. Philadelphia and London: F. A. Davis, 1891.

This scholarly little work is the enlargement of a journalistic essay previously published. It has received the praise of Drs. Frances Emily White, Weir Mitchell and Henry M. Smith, and well deserves it. The history of medicine receives too little attention from medical students, and the attempt here made to illuminate the mythological aspects and origins of the science deserves commendation.

Le Journal de la Société Médico-Chirurgicale Canadienne-Française de la Nouvelle-Angleterre is the name of a new monthly, published entirely in the French language, at Lowell, Mass., the first number of which appeared in January, 1891. Dr. E. Sirois is the secretary of the editorial staff. The fact is of interest as showing how the native New Englander is being crowded upon by the French-Canadian.

CORRESPONDENCE.

LETTER FROM NEW YORK.

Popularization of the Subjects Discussed at the New York Academy of Medicine—Proposal of an "Air Garden" over a Reservoir—Public Baths—Union of the College of Physicians and Surgeons with Columbia College—The Post-Graduate Medical School—The House of Rest for Consumptives at Tremont—The Eastern Dispensary—The Abuse of Medical Charity.

In my last letter I referred to some of the interesting discussions that had taken place in the various societies of this city, and particularly to those bearing upon the subject of the new treatment of tuberculosis. The present attitude of the medical profession here upon this now well-worn theme was accurately stated in a recent report that you published, of a formal discussion held at the New York Academy of Medicine. This body of medical men has shown much energy in the work of the past winter, and in no section perhaps has this been so apparent as in that on "Public Health." The change is the more gratifying because hitherto this very important department has received but little attention; in fact, the attendance at the meetings was so small that one of the members told me that an effort would be made to bring the subjects for discussion to the notice of non-medical persons, and that, at any rate, the section was determined that its apparent inactivity should no longer be a reproach to the Academy of Medicine. This purpose has been steadfastly kept in view, and with such success that on one occasion the usual meeting-room was not nearly large enough to accommodate the audience. At one of these meetings they took up the matter of the proposed "air garden" over the Forty-second Street reservoir, which a very enterprising daily newspaper was endeavoring to make its readers believe would fill a "long-felt want." Strange as it may seem, this journal, which so constantly boasts of being "the champion of the people," nearly succeeded in perpetrating this outrage in the name of humanity, and had actually secured the passage of the bill in one branch of the Legislature. The prompt action of the Academy of Medicine resulted in the defeat of the measure, and I only mention the subject to allude to one or two points of general interest that were brought out in the discussion.

In addition to the almost self-evident fact that a pool of water in the centre of a large city, when deprived of the purifying influences of sunlight and air, must of necessity prove a source of disease, attention was

directed to the practical engineering difficulties in the way of preventing the pollution of the water from a beer garden above it. It was alleged by the promoters of this scheme that the water of this reservoir would be used almost exclusively for fires, but supposing that its use was so restricted, the infection of the general water supply would not be prevented, because the same pipes were used for drinking purposes and for fires. As an instance of the great difficulty in detecting the source of pollution in the water supply, one of the speakers referred to an experience at a certain asylum, where a careful examination of a distant drain, and the usual chemical analysis of the well-water failed to show any contamination, and yet shortly after some chloride of lithium was placed in the asylum sink, the presence of this salt could be detected in the well-water by spectroscopic examination; and on ceasing to use this water, an epidemic of typhoid fever that was at that time raging in the institution was speedily checked.

The matter of public baths has been brought to the notice of the Academy and of the public generally by Dr. S. Baruch. Although some people may consider this gentleman a good deal of an enthusiast on hydropathy, few will deny the crying need in our city of better bathing accommodations. To hear Dr. Baruch describe the delights of the "rain bath" is almost enough, I should think, to persuade even the poor Italians to run the risk of a bath, and certainly, in all soberness, it must be said that the "rain bath," which is the form advocated for public use, has much to recommend it, on the score of both economy and efficiency. The matter has been taken up by the Society for Improving the Condition of the Poor, and it will not be long before these baths will be put to a practical every-day test. The construction of one has already been begun, and it is expected that it will accommodate 500 persons daily.

The Faculty and Alumni and in fact all connected with the old College of Physicians and Surgeons are just now in a state of jubilation over the union of the college with Columbia College. The Faculty is glad, because they have found the care of the splendid gifts of the Vanderbilts almost beyond their means; the instructors are happy, because they see in it some chance of receiving remuneration for their services in the clinic, while the graduates are pleased, as they see in it a prosperous future for the college, and the assured independence that will do much to raise the standard of medical education.

The Faculty of the Post-Graduate Medical School recently held its annual dinner, and the occasion was made doubly enjoyable by the announcement that the sum of $5000 had just been given to assist in purchasing the two buildings adjacent to the school, so that better accommodation might be secured for the constantly increasing classes.

It is with pleasure that I learn that the House of Rest for Consumptives at Tremont has passed into the hands of the trustees of St. Luke's Hospital, for this hospital is well known as having set an example in the matter of caring for consumptives that it would be well if our other metropolitan hospitals would imitate. The understanding is that the hospital will maintain forty beds for the care of consumptive patients. It certainly seems strange that in this city, where new hospitals are constantly springing into existence—for some of which it must be confessed there is but little real demand—that the sore need of adequate provision for consumptives and incurable cases, as well as for convalescent patients that are crowded out of our general hospitals before they are able to go to work, should be overlooked. Large sums of money are divided up among many hospitals, all more or less worthy, while the incurable, and in medical parlance, the "uninteresting" cases receive but little aid. It would be well indeed if our hospitals would pay more attention to the humane aspect of their work and less to the mortality rate and the "interesting" character of the cases they admit.

The large dispensary down town on the crowded East-side, at the corner of Essex and Grand Streets, so long known as the Eastern Dispensary, has been removed to its handsome new home on the corner of Broome and Essex Streets, and its name has been changed to the Good Samaritan Dispensary. It was quite recently opened with appropriate ceremonies, and those who were present on that occasion and inspected the new building were impressed with its elaborate appointments. On the first floor, as the patients enter, they are received by a physician and classified, and those found to have contagious diseases are sent into small isolating rooms and the Board of Health notified. They are prevented from prematurely taking their departure, pending the arrival of the health inspector, by the fact that the doors to these rooms have the knobs only on the outside. An elevator is provided for the use of the patients, who are given different colored cards that show the respective departments to which they are to be distributed. As the cases are classified, brief histories are taken down by a stenographer and typewriter operator employed for that special purpose. It is doubtful whether the wretched and densely ignorant people who throng this dispensary appreciate their privileges, but certain it is that the luxuries now offered by some of our modern dispensaries, such as the Vanderbilt Clinic, are so well appreciated that people in *comfortable* circumstances come from far and near to them, and instead of doing this in secret, they now take pleasure in telling all their friends about how nicely they were treated by the various "professors," and usually wind up by recommending their friends to go and do likewise. In connection with this subject, I cannot refrain from referring to the last report of the Demilt Dispensary, which contains some very wholesome reading, and deals with the subject of the abuse of medical charity and with the character of the medical services rendered at the dispensaries, in a spirit of candor and fairness that is in sharp contrast with the tone of the reports from other dispensaries. After comparing the increase in the number of patients during the past year with the increase in the population, it says: "It is difficult to escape the conclusion that more and more people are using dispensaries. To relieve actual distress we should be zealous, but to do it with the minimum amount of demoralization to the applicants should ever be our aim. Getting something for nothing is demoralizing, whether it be food, clothing, or drugs. A falling-off in these yearly statistics might speak well for the health of the people, or for their independence, or self-respect; it would not necessarily imply poor dispensary management. Real dispensary progress is shown by increased

efficiency, improved apparatus, and greater skill and promptness, not necessarily by enlarged statistics." If other dispensary managers would act upon the fair principles here laid down, the work of the physicians would be much more carefully and skilfully performed, and both the physicians and the patients would be benefited thereby.

PATENT MEDICINES.

To the Editor of THE MEDICAL NEWS,

SIR: I have read with interest Dr. Cowan's letter entitled "Patent Medicines, Quackery, etc." I would like to ask, How will the patent medicine craze ever be stamped out of existence if reputable physicians continue to prescribe the preparations? It is only a few years ago that a physician in this State compounded remedies such as are sold everywhere and published the formulæ. He was expelled from the County Society to which he belonged. To-day the profession is importuned by firms selling such compounds as antikamnia. These firms refuse to divulge the formulæ, yet physicians prescribe this and many similar preparations. I say, *Down with secret formulæ in the profession!*

Truly yours, GEO. F. REIPER, M.D.

LA FAYETTE, IND., JULY 7, 1891.

NEWS ITEMS.

Hebra.—On Sunday, June 14th, a bust of the great dermatologist, Ferdinand v. Hebra, was unveiled at Vienna. An address was delivered by Professor Kaposi.

Ottokar Chiara has been made Professor Extraordinary of Laryngoscopy and Rhinoscopy at the University of Vienna.

Carl Wilhelm v. Naegeli.—On the 8th of May, Nägeli, the Professor of Botany at the University of Munich, celebrated the fiftieth anniversary of his attainment of the doctorate; on the 10th he was dead. Nägeli was a distinguished botanist and biologist. His body was cremated at Zurich.

A Memorial to Matthews Duncan.—It has been proposed by the friends and pupils of the late Matthews Duncan to perpetuate the memory of the great obstetrician by founding at St. Bartholomew's Hospital a Matthews Duncan medal or prize in obstetrics or gynecology, and the erection of a bust, to cost from $6000 to $7000.

Henry Gawen Sutton, M.B. Lond., F.R.C.P.—In the death of Dr. Sutton, at the premature age of fifty-five, not only the English, but the entire medical profession has suffered a profound loss. Dr. Sutton was especially well known for his work in the department of clinical pathology, and as clinician and pathologist occupied positions at Guy's and at the London Hospital.

Koranyi.—In commemoration of the twenty-fifth anniversary of his accession to the professorship, Korányi, of Budapest, made an endowment of 2000 gulden ($850), the interest of which for three years should constitute a prize to be awarded for the best medical work published during that time by one of the assistants at the University.

Handwriting in Prescriptions.—It is stated that the Austrian Minister of the Interior has recently issued an ordinance that the burgomasters of all communes must exercise strict supervision over the medical men practising within their jurisdiction in the matter of legibility of prescriptions. They are charged to see that every prescription is clearly and legibly written in all its parts, so that there may be no doubt as to the remedy, the dose, or the signature.

The Society of Hypnology will meet at Paris, July 20, under the presidency of Dr. Dumontpallier. Measures will be taken for the organization of a second Congress of Hypnotism, to be held in 1892. Among the subjects proposed for discussion are the following: The Relations of Hysteria to Hypnotism; Criminal Suggestions and Penal Responsibility; The Influence of Maternal Impressions on the Fœtus.

Medical Congress in Cuba.—A medical congress will be held in Cuba in 1892. The following subjects will be presented for discussion: Topography and Medical Statistics in Some One Locality in the Island of Cuba; Etiology, Prophylaxis and Treatment of Yellow Fever; Pathology of the Liver in Hot Climates; Is Malaria the Cause of the Malignity of Fevers in Havana? Scheme for the Improvement of the Sanitary Condition of Havana.

The American Public Health Association, constituted of representatives of the United States of America, the Dominion of Canada and the Republic of Mexico, will hold its nineteenth annual meeting at Kansas City, Missouri, October 20, 21, 22, 23, 1891. The following subjects will be considered: 1. Sanitary Construction in House Architecture; (*a*) Heating; (*b*) Lighting; (*c*) Drainage; (*d*) Ventilation. 2. Railroad Sanitation. 3. Meat-supplies. 4. Milk-supplies of Cities. 5. Arsenical Papers and Fabrics. 6. Isolation-hospitals for Infectious Diseases in Cities. 7. Papers upon any of the subjects upon which special committees have been appointed. 8. Papers on miscellaneous sanitary and hygienic subjects.

The Koch Institute.—The clinical section of the new institute for infectious diseases at Berlin is about completed. The buildings comprise seven pavilions, with accomdations for 108 patients, and two for the medical officers and attendants. There is also a small lecture-room, with seats for fifty. The internal arrangements of the scientific section are already so far advanced that it will be ready for use at no distant date. Dr. Richard Pfeiffer, formerly Professor Koch's first assistant, will have charge of the scientific section, and it is probable that Professor Ludwig Brieger will be appointed head of the clinical department. Professor Koch himself will receive a salary of 20,000 marks ($5000) and Drs. Pfeiffer and Brieger 6000 marks ($1500) each.

Syphilis Legislation.—At the last session of the Massachusetts Legislature the following Act was passed and subsequently approved by the governor:

"SECTION 1. Any person who is confined in, or is an inmate of, any State penal or charitable institution, a common jail, house of correction or municipal or town

almshouse, who shall have the disease known as syphilis, shall at once be placed under proper medical treatment for the cure of such disease, and when in the opinion of the attending physician it is necessary for the proper treatment thereof, or that such disease is contagious, so as to be dangerous to the health and safety of the other prisoners or inmates in such institution, the persons under treatment shall be isolated from such other prisoners or inmates until the contagious stage of such disease has passed, or until the time when in the opinion of the attending physician such isolation is unnecessary.

"SECT. 2. When at the expiration of the sentence of any person who is confined in, or is an inmate of, any of the institutions named in Section 1 of this Act, such person shall then have the disease known as syphilis in its contagious or infectious symptoms, or in the opinion of the attending physician of such institution, or of such physician as the authorities thereof may consult, would cause the discharge of such person to be dangerous to public health and safety, such person shall be placed under proper medical treatment, and kept and suitably cared for as provided in Section 1 of this Act, in the institution where he has been confined, until such time as in the opinion of the attending physician such contagious and infectious symptoms shall have disappeared, and the discharge of the patient shall not endanger the public health. The expense of his support not exceeding three dollars and fifty cents a week shall be paid by the city or town where he has a legal settlement, after notice to the overseers of the poor of such city or town, or, if he is a State pauper, after notice to the State Board of Lunacy and Charity, of the expiration of his sentence, and of his condition."—*Boston Medical and Surgical Journal*, July 2, 1891.

Prohibition Medical Congress.—A medical congress was held at Prohibition Park, Staten Island, July 15 and 16, 1891. Dr. N. S. Davis, of Chicago, presided and delivered an address. The following subjects were discussed: The Physiological Relation of Alcohol to Food, by Dr. William H. Porter, of New York; Dr. Elisha Cheny, of Boston; Dr. Leslie E. Keeley, of Dwight, Ill. Some of the Effects of Alcohol on the Brain, by Axel Gustafson, late of London, England; Dr. N. Roe Bradner, of Philadelphia. Drunkenness a Disease: its Remedy by Scientific Means, by Dr. T. D. Crothers, of New Haven. Can a Physician Practise Medicine without Alcohol? and if so, What Shall be the Substitute? by Dr. C. Gilbert Wheeler, of Chicago; Dr. F. O. Broady, of Chicago; Dr. James Wood, of New York. The Effect upon Longevity of the Moderate Use of Alcoholic Liquors, by Dr. M. L. Holbrook, of New York. Does the Habit of Moderate Drinking in a Patient Increase the Danger when Attacked by Disease? by Dr. L. M. Green, of Wilmington, Ohio. Climatic Influences as Related to Inebriety, by Dr. E. P. Thwing, of Brooklyn, N. Y. The Normal Expenditure, Resources and Maintenance of the Human Economy, Physiologically and Chemically Considered, by Dr. J. Hartmann, of New York. What are the Effects of Alcohol upon the Physical, Chemical and Vital Properties of the Animal Tissues and Fluids? by Dr. Henry Clay Paddock, of New York; Dr. W. F. Pechumen, of Detroit; Dr. Ephraim Cutter, of New York. In What Ways may a Physician Effectively Help to Stay the Ravages of Intemperance? by Dr. R. H. Thomas, of Baltimore; Dr. Henry A. Pooler, of New York; Dr. Fred. Wooster Owen, of Morristown, N. J.; Dr. John Blackmer, of Springfield, Mass. Ammonia vs. Alcohol in Pneumonia, by Dr. George D Dowkontt, of New York. Personal Observation of the Effects of Alcohol in Producing Crime Among Women, by Dr. Lucy M. Hall, of Brooklyn, N. Y. Is Alcohol a Poison? If so, Should it Ever be Taken into the System except under the Direction of a Medical Adviser? by Dr. William C. Wile, of Danbury, Conn.; Dr. Henry Carver, of New York. Does the Moderate Use of Fermented Liquors tend to Injure the Body and Brain? by Dr. Edward C. Mann, of New York; Dr. Henry S. Drayton, of New York. The Use and Abuse of Alcohol as a Medicine, by Dr. Henry C. Houghton, of New York; Dr. H. Bedell Crane, of Newark, N. J. The Woman Doctor: Her Place and Work, by Mrs. Isabella M. Rankine, of Brooklyn, N. Y.; Dr. Sarah H. Morris, of Buffalo, N. Y. The Responsibility of the Medical Profession in Prescribing Alcohol, and their Duty in the Matter of Reform, by Dr. Morris, of Texas. The Use of Alcohol: First as Medicine, Second as a Beverage, by Dr. N. S. Roberts, of New York. Do Alcoholic Beverages Aid Digestion, and Assist in the Assimilation of Food? by Dr. I. N. Quimby, of Jersey City, N. J. The Hereditary Effect of Alcoholism, by Dr. John Francis Burns, of Fort Hamilton, N. Y.; Dr. Henry G. Hanchett, of New York. The Relations of Alcohol and of Heat to the Nervous Centres, by Dr. T. S. Lambert, of New York. The National Temperance Hospital at Chicago; the Results Noted of the Exclusion of Alcohol in the Treatment of Diseases, by Dr. C. G. Davis, of Chicago. The Latest Investigations of the Effects of Alcohol on the Heart, by Dr. David Wark, of New York. What is the Best Medical Treatment for Alcoholism? by Dr. N. L. North, of Brooklyn, N. Y.; Dr. C. H. Shepard, of Brooklyn, N. Y. An illustrated address will also be delivered by Dr. C. Gilbert Wheeler, of Chicago.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 7 TO JULY 13, 1891.

COCHRAN, JOHN J., *Assistant Surgeon.*—Leave of absence on surgeon's certificate of disability extended three months.

BANISTER, W. B., *Assistant Surgeon.*—Granted leave of absence for fourteen days.

IRWIN, BERNARD J. D., *Surgeon.*—Relieved from duty at St. Louis, Mo., and ordered to Chicago, Ill., for duty as Medical Director, Department of the Missouri.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 11, 1891.

BOYD, ROBERT, *Assistant Surgeon.*—Ordered to the U. S. Receiving-ship "Dale," Washington, D. C.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

PROBLEMS IN SURGERY.[1]

BY OSCAR H. ALLIS, M.D.,

SURGEON TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA; FELLOW OF THE AMERICAN SURGICAL ASSOCIATION.

PROBLEM I. *A man in fine health, thirty years of age, falls before a moving railroad train and has his arm crushed and severed from the body just below the shoulder. Seen an hour after the accident, he has a fairly good pulse, is perfectly conscious, has "reacted" well, has a good moral and physical history. Shall the surgeon proceed to amputate?*—The simple problem of shock is to be met. This is a most important question. It has been studied critically for a century. I cannot enter upon a discussion of it now. I can only state my own impressions, experience and practice, and leave the subject undefended. My answer is, *No.* I care not how soon after a railroad accident the patient is seen, there are elements common to all cases that cannot be estimated by any instrument of precision. Who can estimate the agony of the man as he falls, as it were, into the jaws of death? Who can estimate the shock, even if he escape bodily harm? Who can estimate the pain produced in the severance of the limb at a point so near the trunk? Add to this the unavoidable loss of blood—and I need no more to convince me that the man, with his "fair pulse" and "good reaction," is yet in too profound a state of shock to add to it. It were better by far to carefully wash the lacerated stump with warm bichloride solution, to dress it with as much care as if amputated, to leave the man for at least twelve hours, and secure for him the best of all restoratives, sleep—and even then do not amputate simply because he has had *time* to react. As there is no means of estimating shock, so there are no criteria by which we can estimate its subsidence. One of the blessings of modern surgical methods is that a lacerated stump can be kept uncontaminated for days, and the amputation suffer nothing by the delay.

Men for ages have taught, and are still teaching, that if you find a man immediately after an accident, even though he be in a state of profound shock, the amputation adds nothing to the magnitude of the shock nor danger to the patient. To this I have simply to say that if you could drag the poor fellow from under the wheels of the car, and place him immediately upon the amputating table, with everything in readiness, such an act would be wanting in good common sense. In such a case I would by all means dress the wound with scrupulous care and defer amputation for at least a day. Upon this point few will agree with me. Let those who hold a contrary opinion stop and reflect upon the number that have died upon the operating-table, or within six hours after amputation, and, if their experience is like my own, they will recall cases in which their judgment was at fault, and that the increment of shock from the amputation was sufficient to turn the scale adversely. There were formerly arguments against delay that do not exist now. The advances in surgical methods make possible, and often of vital importance, the delays of which I speak.

PROBLEM II. *There is an injury to the foot of such a nature that a portion of the tarsus can be saved. Shall we select a Chopart, or a Pirogoff?*—The question is as to the point of amputation. It is an axiom in surgery that when a limb is injured one should save all he can. Were I to lay down a rule I would base it on the function of the limb. The function of the upper extremities is *prehension*, hence save all you can. A finger or half a finger may be of priceless value. The function of the lower extremities is *locomotion*, hence the operation should be adopted that will yield the best results. Upon this head we can learn much from the makers of artificial legs. One that I consulted, alluding to Chopart's and Pirogoff's operations, said: "Amputations about the ankle always make poor walkers. Every leg-maker will tell you so." Another, referring to the same class of amputations, said that in such cases he was able to fit limbs, but that the best walkers were those that had a few inches below the knee. The testimony of the patients themselves is of great value. Men who can hunt, mount the saddle, run up and down stairs, hardly miss the amputated part; but this cannot be said of those in the case of whom the Chopart or the Pirogoff operation has been performed. Such men can walk slowly and conceal their defects, but they cannot walk fast or run without a decided limp. Upon this subject I fully indorse the sentiments of Dr. Mordecai Price, expressed in a valuable contribution to surgery.[1] The same criticism applies

[1] Being the Annual Address in Surgery read before the Medical Society of the State of Pennsylvania, June 4, 1891.

[1] Trans. of the Philadelphia County Medical Society, 1889.

to amputation through the knee-joint. The rule, "Save all you can," has in this connection, as in others, been of great detriment. Leg-makers (and leg-wearers confirm their statement) say, Never amputate through the joint unless you saw off the condyles; but it is far better to amputate just above the condyles. Don't amputate through the joint; go *above or below it*.

PROBLEM III. *Shall we use ligatures in our amputations?*—Ambroise Paré introduced the ligature and surgeons have ever since been trying to do without it. Acupressure had its brief hour of notoriety: torsion has shown itself to be safe, even upon the axillary and femoral arteries. But the ligature triumphs—not that of its immortal author, large, clumsy, and septic, with one end sticking out of the wound, but the ligature of the finest, choicest, strongest sterilized silk, or animal fibre, cut short, and allowed to remain. For the smaller vessels the hæmostatic forceps suffices. He who introduced these should have a monument beside that of Ambroise Paré. Other questions, such as those pertaining to fractures, to drainage, suturing, dressing and re-dressing, all present themselves, but I cannot delay to present them.

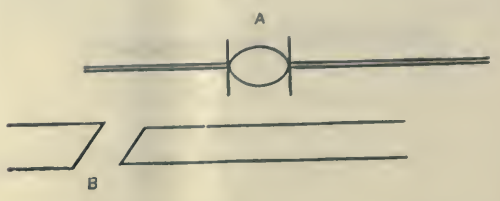
PROBLEM IV. *A woman, seventy-five years old, has fallen and fractured the neck of the femur. What shall be the treatment?*—The conditions of the problem are clear and distinct, yet what differing results are obtained! One will apply weights, demand absolute rest, reap a harvest of bedsores—and an early death. Another, following the directions of Sir Astley Cooper, will disregard the fracture, treat the woman, get her out of bed in a week, if she will bear it, with a good useful limb to reward him for his pains.

The prevailing deformity in fractures at the upper third of the femur, exclusive of the neck, presents a striking uniformity; in many cases the patient remains a cripple for life. Two problems present themselves: Why is the man with a strongly united bone, lame, and why do we remain satisfied with a mode of treatment that cannot fail to produce deformity?

Up to this point I have selected every-day accidents to illustrate the problems that present themselves. The answers are best known to the medical profession. I wish now to direct attention to a line of work that should engage our serious attention, and to problems that, as a profession, we have disregarded, or upon the solution of which we have looked as impossible.

PROBLEM V. *A child falls and injures its elbow; a fracture is discovered. The bone unites, but the forearm wastes; the fingers are contracted; there is every evidence of a nerve lesion associated with the injury. Six months wear away; massage and electricity are employed without avail. What shall be done?*—I have seen four such cases. Erichsen also reports some of the same kind. I have in three instances advised a mode of treatment that seems to me rational, but I have never been permitted to carry it out. I would cut down upon the nerve and excise the cicatrix (A, Fig. 1), and measure the

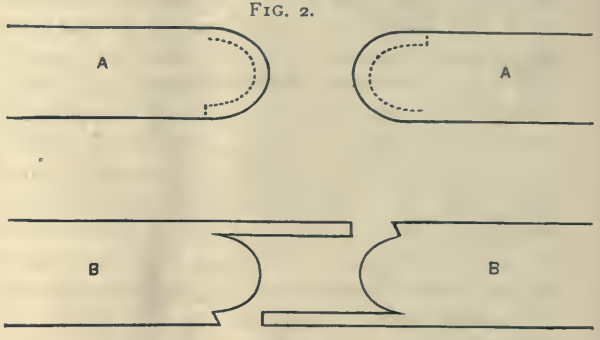
FIG. 1.



length of nerve removed. If the gap were considerable, say an inch, I would remove the same length of bone from the humerus (B) at a point some distance above, reunite the humerus, suture the nerve, and close the wound.

PROBLEM VI. *Both bones of the leg are broken; the fibula unites; the tibia fails to unite. How shall we proceed?*—It is not a difficult matter to bring about union of the tibia by removing a section of the fibula; but the real difficulty lies in lengthening

FIG. 2.



the tibia. Phelps has made an honest effort at lengthening the bones under conditions somewhat similar to those stated. The bone-dowel has been tried for the same purpose, and decalcified bone chips have been implanted in the hope of inducing recalcification. To lengthen bone, to restore a lost joint, suggests problems that it seems hard to think are beyond the skill of man.

My suggestion is as follows: Let A, A, Fig. 2, represent the ends of the unuited tibia. If the periosteum, with sufficient superimposed connective tissue, be dissected from A, A, as represented in B, B, and the intervening space be filled with bone chips, it is possible that the tibia could in this way be reproduced.

PROBLEM VI. *The surgeon, in operating for the radical cure of hernia, incautiously cuts the vas deferens. Shall he suture the divided ends?*—Here is a subject that may well engage attention. The lumen of the spermatic canal is very small. Unless perfect

approximation be secured, there must supervene a mechanical obstacle to its ever again acting as a duct.

Fig. 3 illustrates how any defect in approximation would be fatal to its function. The subject presents a problem worthy of careful study.

Fig. 3.

The most important tubular structures in the body are the arteries. It is sad to think that the division of the femoral artery, by a stab from a penknife, may prove fatal to life or limb. How helpless a surgeon feels, that he must at times amputate a limb to save life, when the only injury is that before mentioned. Must we always stop where we are? Must the retraction and contraction of arteries, the tendency to clotting, the secondary hemorrhage and tendency to aneurism, ever remain bars to progress in this direction?

In the ordinary phlegmonous abscess we note its maturing in a fortnight, its spontaneous rupture and rapid healing. There is a single point in this that I desire to notice, viz., its rapid, spontaneous cure. This is due to its collapsing. The abscess forms in soft tissues that render collapse certain. Abscesses in bone cannot heal by a collapse of their walls: they always pursue a tedious course.

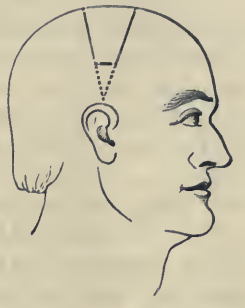
In connection with the principle of the collapse of an abscess let me consider an injury of the skull resulting in the formation of an abscess.

Problem VII. *A blow is struck or a wound inflicted upon the skull; a cerebral abscess forms; pus is found in the wound or upon trephining. What is the proper treatment?*—Can such an abscess heal by collapse of its walls? Certainly not. Such cases are far too often fatal. Pus tends to find a dependent outlet when it cannot readily flow off. What shall be done? I would suggest the removal of a sufficient amount of the skull to permit the dura to fall in with approximation of the abscess walls. This is illustrated in Fig. 4.

Fig. 4.

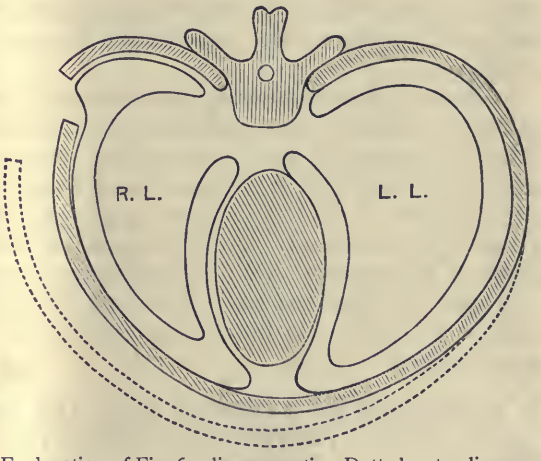
In hydrocephalus we have an analogous condition. To aspirate ventricular fluid contained in a closed, bony cavity, is likely to do more harm than good. In hydrocephalus both ventricles are usually filled; there is symmetrical dilatation; there should be a provision for symmetrical contraction; hence the plan of the removal of a portion of the vault of the skull, extending through both parietals. This is illustrated in Fig. 5. It is possible to remove the bone from the sinus and not wound the latter. Then gentle, symmetrical compression, together with constitutional remedies, would hold out a prospect of return to normal conditions.

Fig. 5.



There is still another field, a most important one, in which the lesson from the collapse of an abscess suggests a remedy. I allude to pulmonary tuberculosis. Why this disease is not self-limiting in pulmonary tissue, as it is in the head of the femur, is not to be explained by the nature of the disease itself. The tuberculous joint can throw off the disease. In pulmonary tuberculosis the system makes a most desperate effort to accomplish the same end, but fails. Nature gives us a hint as to the way in

Fig. 6.



Explanation of Fig. 6—diagrammatic: Dotted outer lines represent the contour of chest before the removal of part of a rib. The deeper, dark lines show how much the chest has sunken in. The greater shrinkage is to be found on the side from which the section of rib has been taken, as will be seen by comparing the two lungs.

which we should proceed. Who that has made an autopsy in a case of advanced phthisis has found the pleura? What has become of it? Nature has glued its two surfaces together. The lung is fastened to the chest-wall. Nature puts forth all her energy to cause collapse of the chest-cage. She succeeds but in part. The sunken chest is an illustration of Nature's mode of causing shrinkage of the abscesses in order that she may effect a cure. Why not follow this hint and seek to give relief by the retraction that would follow a resection of the ribs?

I would make the following suggestions:

(1) At what point make the resection? As near the angle of the rib as possible, *i. e.*, in the lateral or postero-lateral aspect of the chest. A glance at Fig. 6 represents the short portion of the rib unaffected by the section. This, I think, will unquestionably be the result. The long part of the rib is now attached only to the vertebral column through the sternum and the corresponding rib of the opposite side. It becomes a long lever, and can be most readily acted upon by atmospheric pressure.

(2) How much of each rib should be resected? At least two inches, possibly three. I say at least two, for no possibility should be afforded for the bone to be reproduced. To this end the periosteum should be removed with the bone. A cicatricial fibrous band will form that will answer every purpose.

(3) How many ribs should be resected? At the very least four, and these should be the longest. A resection of the fifth, sixth, seventh and eighth ribs would remove much of the resistance of the thoracic cage, and permit a very considerable degree of retraction.

As to the mode of performing the operation I have nothing to suggest. The ease with which in pyothorax the resection is done is striking, and the great value of resections in this disease are now matters of surgical history. So, too, in regard to the best time to make the resection. I would suggest the early stage. Certainly less could be hoped from so severe a measure in advanced cases, with both lungs involved, than when the disease was confined to a single lung.

OBSERVATIONS ON TUBERCULOSIS; AND THE DIAGNOSTIC VALUE OF THE TUBERCLE BACILLUS.[1]

BY HENRY SEWALL, M.D., PH.D.,
OF DENVER, COL.

THERE is probably not in the whole nosology a more sharply defined disease than tuberculosis. The ideal of scientific classification is approached when the structural changes of a disease can be used to guide and determine the procedures of surgical art. Thus, hesitating to perform a radical operation, a surgeon opens a cavity suspected of being tuberculous, and sends a portion of the diseased tissue to the adjoining pathological laboratory; in ten minutes word is returned that the tissue is tuberculous, and all doubt and hesitation on the part of the operator are removed.

Darwin and others have shown that animals in their evolution from ancestral forms have diverged in groups that, though remaining distinct and well defined at their centres, may be inextricably blended at their adjoining borders, making a rigid classification impossible. In the same way in diseases that in many cases are but the effects of developmental life—*i. e.*, of germs—there is often doubt as to classification when the symptoms and lesions are common to different disorders. There is thus a broad borderland surrounding the type of tuberculosis in which are represented maladies the nature of which is in dispute. According to Welch, there are many authorities that consider it proved that scrofula is but a peculiar manifestation of tuberculosis, although probably a great majority of medical thinkers still consider the question *sub judice*. Again, evidence has abundantly accumulated for the opinion that lupus is simply a tuberculosis of the skin; yet so eminent an authority as Jonathan Hutchinson, in a recent discourse, after throwing doubt upon the bacillary origin of lupus, said: "The result of Koch's injection treatment may possibly force us to believe that there is something about lupus that connects it far more closely with tuberculosis than I have admitted." Then, again, there is the oft-fought battle over the relationship of tuberculosis and pulmonary phthisis. I think it may be said, without fear of contradiction, that an immense majority of those competent to discuss the question hold that, with certain definite exceptions, phthisis and tuberculosis of the lungs are coextensive terms; in other words, the "unity of phthisis" has been established. But certain authorities worthy of a hearing (for example, Gibbes and Shurly) insist that there are two pulmonary affections anatomically and clinically nearly identical, but one of them a specific germ-disease, the other not so. Universal acceptance of any conclusions pertaining to the subjects thus far outlined must be left for the wider knowledge of future decades.

To-day we may rest secure in the belief that there is a disease called tuberculosis, that has definite clinical and anatomical features, and that is characterized by the invariable occurrence of a certain microscopic parasite known as the "tubercle bacillus."

In a work that ranks with Harvey's demonstration of the circulation of the blood, Robert Koch, just nine years ago, proved that the tubercle bacillus is the cause, and not simply the accompaniment, of

[1] Read before the Medical Society at Denver, April 21, 1891.

tuberculosis; and incidentally he proved that tuberculosis is an infectious disease, the agent of infection being the bacillus itself, transmitted from one individual to another. Koch's work has withstood every assault that adverse ingenuity could bring to bear upon it. Koch's conclusions were derived from experimental observations on the lower animals, which proved, as we have said, the bacillary origin and infectiousness of tuberculosis.

But in the case of our human brother it is, for obvious reasons, difficult to reach early and safe conclusions on these subjects, and I have been led to believe that only a comparatively small minority of the medical profession admits the infectiousness of tuberculosis in man. Still, anyone may find abundant evidence that tuberculosis is transmissible, and that, moreover, the avenues for the reception of the virus—*i. e.*, the bacillus—are the air-passages, the alimentary canal, and open wounds. In pulmonary phthisis the agent of infection is expelled from the body, so far as known, only in the expectorated sputum.

It may not be out of place to rehearse a few of the many observations that have recently been made with reference to these points. Cornet, in his remarkable work on the infectiousness of tuberculosis, found that the air expired from the lungs of phthisical subjects was never infectious, but he found that the dust wiped from the wall at the back of the beds of such patients produced tuberculosis in guinea-pigs inoculated with it. No forms of bacteria rise from a still, moist surface; it is the drying of the sputa that allows these minute organisms to be wafted about as impalpable dust. Cornet wiped the dust from the walls of hospital-wards and waiting-rooms and injected the various specimens into rabbits and guinea-pigs. The results were negative, except in those cases wherein the dust came from rooms inhabited by tuberculous patients that were careless of their sputa; in such cases tuberculosis was often produced. Another class of facts is as follows: The convent of Frauen Chemsee is on an island of 300 inhabitants. Since the beginning of this century there have always been a few deaths from phthisis among the inhabitants, but never more than seven in ten years. Not until 1860 had a death from tuberculosis occurred in the convent. In each following decade, however, there were, among the from twenty to forty nuns, two deaths from tuberculosis, and in the last decade there were eleven sisters ill with the disease. Many similar observations might be presented illustrating the communicability of the disease. Again, Cornet has gathered the vital statistics of the Catholic orders of nurses in Prussia for the last twenty-five years. These institutions contain a yearly average of 4028 persons, who usually enter at the age of twenty-five, after a medical examination and having been certified as healthy. But the average age at death was 37.27 years, or ten years below the normal. Three-quarters of these deaths were from tuberculosis. Avendario has reported a case of tuberculous infection of a boil in a patient placed in the same hospital ward with consumptives; parts of one lung were secondarily infiltrated. It has been found that when an extract of a pure culture of tubercle-bacilli is fed to animals, the bacilli penetrate the epithelium of the alimentary canal and produce general infection. A dilution of tuberculous sputum of 1:400,000, injected into guinea-pigs, still produces tuberculosis. Careful statistical enumeration also shows that tuberculosis, or, perhaps better, a disease having the physical signs and clinical history of phthisis, is responsible for one-seventh of the deaths from all causes, while during the productive period of life one-third of all deaths may be attributed to it.

Whatever theories as to the unity or duality of phthisis may be held, it is hardly to be doubted that a vast majority of the cases are of bacillary origin. Ever since the demonstration of the tubercle bacillus in 1882, investigators all over the world have been on the lookout for evidence to invalidate the doctrine of the germ origin of the disease. Yet I find in volumes v. to vii. of the *Centralblatt für Bacteriologie*, in which is gathered the current literature of bacteriology for the years from 1888 to 1890, but two recorded cases of death from disease presenting the clinical history and post-mortem appearances of pulmonary phthisis, but in which it was not possible to demonstrate microscopically the presence of tubercle bacilli. Some seven or eight years ago, E. L. Trudeau published the clinical history of a similar case, and Gibbes appears to have seen several.

It should be noted that the search for bacilli in a section of tissue or a film of sputum under the microscope is similar to the proverbial hunting for needles in a haystack; unless the needles be fairly numerous, it is highly probable that they will be overlooked. Thus the surgical pathologist does not depend on microscopical examination to determine the tuberculous character of a diseased joint, but he withdraws a portion of the tissue or fluid therefrom, places it in a nutritive medium favorable to the growth and multiplication of the bacilli, and then inoculates a rabbit or guinea-pig with the culture, and watches for the development of tuberculosis in the animal. I have known the two or three bacilli on a slide containing a film of tuberculous sputum to be overlooked, though carefully searched for by more than one observer. Therefore, negative microscopic evidence as to the presence of bacilli in sputum or tissue must be received with caution.

Let us now briefly consider the morphological and vital characters of the tubercle bacillus which, I have

presumed to be the etiological factor in the disease. The size and form of the bacilli in general are variable, but there is something characteristic in each individual that the trained eye readily distinguishes. The bacillus tuberculosis is one of the minutest of the rod bacteria. The length of the single rods varies from one-quarter to three-quarters of the diameter of a human red blood-corpuscle; the majority have a length of from 3 μ to 4 μ, the width of the microbe being but one-fifth to one-sixth the length. The bacillus may appear in the form of a rod that is either very short or long, or of a long rod apparenly made up of short joints; or the protoplasm of the rod may be aggregated into minute spores. But it is the reaction to staining reagents that distinguishes the tubercle bacillus from all other bacteria except the bacillus of leprosy. It absorbs dyes much more slowly and gives them up much more reluctantly than do other bacteria; it is on account of this micro-chemical reaction that it is possible to distinguish the tubercle bacillus in a medium containing any number of other bacteria.

During the past year, while resident physician at the Adirondack Cottage Sanitarium for the Cure of Phthisis, I had valuable opportunities for studying some of the little-known factors in the history of tuberculosis. One principal object of my observations was, if possible, to discover some constant relation between the microscopical and chemical characters of the tubercle bacilli, as demonstrated in the sputum—such as their size, shape, number, and staining reactions, and the clinical history of the patients as represented by physical and rational signs showing their general condition of vitality. According to their signs and symptoms, patients were divided into four classes: 1, those that were undoubtedly on the road to recovery; 2, those that were simply holding their own; 3, those the condition of whom was doubtful; and 4, those that were undoubtedly failing. I had the pain of finding few positive replies to the questions to which I sought answers, still the results were not altogether barren. Like other observers, I found but little correspondence between the gravity of the clinical symptoms or signs and the number of bacilli in the expectoration. In some of the worst cases, the bacilli were comparatively few, though they were constantly least numerous in patients that seemed very near recovery; the microbes were apparently most numerous in the sputum of those invalids with extensive signs of pulmonary trouble, but the course of the disease of whom had become arrested. There seemed a tolerably well-marked connection between the size and shape of the individual bacilli and the virulence of the disease. As had been previously suggested to me by Dr. Trudeau, of Saranac Lake, Director of the Sanitarium, I found that the very short straight rod-forms generally corresponded to cases that were manifestly running to a fatal termination. I also came to the conclusion that the long forms, made up of short rods or joints, indicated the same serious vital condition; while the long, smooth, homogeneous rods of straight or curved outline were, in general, characteristic of cases in excellent physiological condition.

The sputa of some patients were remarkable in the richness of spore-formation in the bacilli; this appeared to be particularly marked in old cases that were holding their own well against the disease.

It is a familiar fact that bacteria of any kind, when stained by aniline dyes, rapidly lose their color on the addition of an acid, and it is probably commonly believed that the distinctive micro-chemical character of the tubercle bacillus is a resistance to this decolorizing action of acids, the explanation being the slow diffusion of stain and acid through the body of the bacillus. This belief and explanation cannot be correct, for I found that when the stained bacilli were treated with acid while watched under the microscope, they would almost immediately lose their color as did the non-pathogenic forms. But when the acid was in turn washed away by irrigation with water, the color would return to the tubercle bacilli, provided the action of the acid had not been too long continued. The same fact may be demonstrated in regard to the epidermis of one's hand: a little eosin solution stains it deeply; acid poured on takes the color out, but this to some extent returns when the acid is washed away with water. Now if, as the facts seem to demonstrate, the vitality of the tubercle bacillus is a variable factor, we might with reason expect that the most virulent forms of bacilli would be present in the worst clinical cases, and the least noxious in those wherein the disease was under control; and, furthermore, we would expect to find the reaction of the bacillary protoplasm to staining dyes to vary with its functional activity or virulence. As a matter of fact, my observations gave reason for the belief that in pure cultures of the tubercle bacilli, when the cultures were fresh and virulent, the stained microbes were more resistant to the action of acids than in the case of similar cultures that had been kept for months and had demonstrably diminished in virulence or had entirely lost it.[1] Correspondingly, though with much less certainty, experiments indicated that in the worst clinical cases the association of staining dye with bacillary protoplasm was more stable than in the milder forms of the disease.

I now come to the all-important question in practical diagnosis. What is the probability of the

[1] For the pure cultures of bacilli I was indebted to the kindness of Dr. Trudeau, to Drs. Councilman and Abbott, of the Johns Hopkins University, and to Prof. Vaughan, of Ann Arbor.

bacillus being demonstrable in the sputa of a given case of tuberculosis? The fact that bacilli are demonstrably present, but owing to their paucity of number are usually overlooked, has already been referred to. It may be admitted, without fear of successful contradiction, that where the bacillus is demonstrated there is tuberculosis. But how far may tuberculosis exist without certain physical signs, or without bacillus-containing sputum? This is an all-important question, for this is the stage of phthisis that is manageable, and there is little doubt that the disease might soon be stamped out if diagnosticated thus early.

For several years I have had under careful observation a case of which I append a brief account:

An athletic man, closely confined to sedentary work for nearly ten years, at the age of thirty, and after some weeks of general malaise, suddenly suffers from hæmoptysis. With care there is apparent recovery, and violent exercise is frequently indulged in and enjoyed. Each succeeding winter, however, brings on a train of distressing subjective symptoms in the form of pleuritic pains and failure of nervous energy. For four years after the hæmoptysis, careful examination of the slight and non-typical expectoration, which was probably not pulmonary in origin, failed to reveal the presence of bacilli. Suddenly, without other symptoms, a slight pulmonary expectoration began, and the presence of tubercle bacilli in the sputa was immediately demonstrated. During all this time, and for three months after the appearance of the bacilli, repeated examinations of the chest by different and competent observers had been made with negative result, except so far as a limited occurrence of those indefinite variations from the typical respiratory murmur that, if considered pathognomonic, would class the great majority of mankind as tuberculous.

Rather suddenly, about four months after the demonstration of bacilli in the sputum, this patient presented manifest moist sounds at both apices, their only precursor having been a slightly prolonged expiration. Only slight loss of weight and deterioration in appearance had marked the course of the disease. There is, I think, good reason for believing that in this patient tuberculous disease antedated the hæmoptysis that occurred four and a half years before the appearance of physical signs in the chest.

Very valuable in this connection are the data recently gathered by a pathologist of New York. His object was to discover whether the tubercle bacillus could be proved to exist in the human body without giving rise to organic disease. He was permitted to make autopsies of persons that had met with sudden death by accident, but who had previously presented no evidence of tuberculous disease. With strictest precautions against contamination, bronchial glands were removed from the subject on the post-mortem table, and extracts from them were injected into living animals. The results were that in a large percentage of cases the animals so treated became tuberculous. Facts like these, aided by a legitimate use of the knowledge we possess concerning the innate protective powers of the living tissues, make it easy to believe that the virus of a disease like tuberculosis may lurk for an indefinite time without objective signs or symptoms, until some untoward change of environment or depression of vitality lights the spark into a blaze that is beyond our power to extinguish.

An exact estimate of the value of sputum examination in the diagnosis of tuberculosis could only be made after careful study of hundreds of phthisical cases kept under observation for months or even years of time. For it cannot be too strongly insisted upon that in a certain percentage of cases the bacilli are in a location unfavorable for expectoration until the pulmonary lesion has taken a special and new direction. Thus, a year ago a woman came to the Sanitarium with manifest physical signs of pulmonary trouble and a personal and family history of tuberculosis. No bacilli were discovered in her sputum. She was dismissed after some months, much improved. To-day she is in Denver; the physical signs have somewhat increased, but still no bacilli are to be found.

The data that I have to record were gathered from observations made at the Adirondack Cottage Sanitarium already mentioned. They include only patients submitted to examination with the definite objects set forth in this paper. The Sanitarium is an institution for the *cure* of phthisis, and so far as possible admission is restricted to patients in the earlier stages of the disease. As a matter of fact, however, humanitarian impulses not infrequently allow a person in an advanced stage of the disease to slip in. However, as there is a strong effort made to allow the entrance of only curable cases, we have here a collection of patients in whom, if a fair proportion of bacilli-holding sputa could be detected, the fact would argue very strongly for the diagnostic value of the microbe. Indeed, so well is the restriction on the admission of cases maintained that it would be difficult for an untrained eye to discover that the sojourners at the Sanitarium are a collection of invalids, so well preserved is their nutrition and general physical condition. The whole number of patients observed with reference to the facts detailed was 72. As to sex, they were just evenly divided. As to age, 17 were 20 years old or under; 37 were from 21 to 30 years of age, and 18 between 31 and 40 years. Of the whole number of patients, 5, or a little less than 7 per cent., claimed to have no expectoration. It is significant that all of these were women, and with one exception their ages ranged

from 25 to 37 years. A certain proportion of the patients expectorated more or less profusely, but microscopic examination, usually several times repeated, failed to discover bacilli in their sputa. This class consisted of 16 persons, or 22 per cent. of the whole number. In all the remaining 51 patients, bacilli were detected with certainty; these form 70.8 per cent. of the number, or more than 75 per cent. of the number expectorating.

An analysis of these cases according to their physical and rational signs is not without interest. Of the 21 cases in which no bacilli were found, all were in excellent condition in regard to nutrition and the enjoyment of life, with the exception of one, who suffered and soon died from intercurrent Bright's disease; the remaining 20 were alive and comparatively well when last heard from. Five of the 21 had rather extensive physical signs, while 9 of the remaining 16 had signs of disease so faintly marked that they could with difficulty be detected. Two of the number whom I found without bacilli were said in times past to have had the microbe demonstrated in their sputa by other observers. Of the 51 patients in whom the bacilli could be demonstrated, 18 were manifestly in a decidedly bad way—in fact, 15 of these, or nearly 30 per cent. of the 51 having bacillary sputa, are known to have died since these records were made. This leads to the conclusion that when phthisis is fatal it is tuberculosis, with tubercle bacilli in the sputum. Twenty-one of the 50 bacilli-expectorators were in a serious clinical condition, but holding their own against the disease, and a large proportion were capable of considerable physical exercise or useful employment. Finally, 12, or more than 23 per cent. of the 51, might be described as in excellent condition, and would be considered healthy persons in any average community. The history of a number of those in this last class would be an interesting exhibition of how in phthisical cases environment may bring about rapid improvement or serious deterioration.

As already remarked, two patients, in the sputa of whom bacilli were wanting, were said previously to have had the bacilli present. During my own observations, lasting over some eight months, I found the bacilli to disappear in but two cases, though slight physical signs still remained, while in two others the germs were found in a second search after having been overlooked on the first occasion.

To sum up, out of 72 cases of pulmonary phthisis, more than 55, or 76 per cent., were in such good general condition that their invalidism would hardly have been noticed in an ordinary community. Tubercle bacilli were demonstrated in the sputa of 51, or 70.8 per cent. of the whole number.

In conclusion, I beg to offer a practical remark with regard to prophylaxis. If we take it as proved, that tuberculosis is infectious, and that the agent of infection is the bacillus contained in the sputum expectorated, it needs no discussion to show that the utmost care must be used to render innocuous the matter expectorated from the lungs of consumptives. It is practically impossible to make the safeguards absolute, for no one can prevent an invalid from expectorating on the street, even though æsthetic impulses may render his presence harmless while indoors; but we may draw comfort from an observation recently made by Koch, and quoted in the *Lancet*, that "direct sunlight quickly killed bacteria—the tubercle bacillus for example. Even daylight produces the same effect, though more slowly. Cultivations of tubercle bacilli, propagated for from five to seven days at a window, died." In this way, it is to be hoped, the germ-laden dust of our streets is providentially looked after. Disease germs, like evil, seem to love darkness. Dr. Gibbes has said that he has inoculated animals with tuberculosis by means of a film of dry sputum that he had kept, if I remember rightly, for two years.

The safe disposition of the sputum of consumptives is a matter of such paramount importance to the welfare of every community that of late years many methods have been devised to this end. Undoubtedly the most thorough system having in view the prevention of infection is that recently proposed, I believe, by a Russian savant, who seriously suggested that every person suffering from pulmonary phthisis be compelled by law to constantly wear suspended around the neck an elaborate form of spit-cup to receive his expectoration, and which should bear to the patient somewhat the same relation that the nose-bag does to the horse's head.

Much ingenuity has been exercised in devising receptacles for the tuberculous expectoration in the form of simple portable cups, or more or less complicated vessels of glass; but beside the patient's æsthetic objection to using them there is the much more cogent difficulty of the uncertainty of completely sterilizing the vessels when out of use. In my opinion, by far the best form of spit-cup is that manufactured from cardboard by the Sanitary Supply Company of New York. The cup is so constructed that it may even be overturned without spilling the contents—a very important feature—and when after a few hours or a day the cup has served its purpose it may be submitted to the action of that most perfect of all disinfectants—fire.

In the Adirondack Sanitarium, guarding the expectoration is carefully insisted on. Patients are warned against swallowing the sputa — probably the usual method of its disposal in polite tuberculous circles; they are cautioned against expectorating in

handkerchiefs, which soon dry and let their dust fly to the winds; and they are forbidden to expectorate from the public veranda; such an act as wilfully expectorating on a floor would be considered hardly less than a crime.

On the other hand, the patient is provided with the small hand spit-cups *ad libitum*, and on the public veranda and in the halls of the Sanitarium much larger paper receptacles of the same pattern are inconspicuously but conveniently placed.

The therapeutics of phthisis embraces a legion of drugs and methods; but to-day, even in the light of the agitation of the past few months, we must agree in believing that only in a system of rigid prophylaxis can we hope to successfully cope with the king of diseases.

BARIUM CHLORIDE FROM A CLINICAL STANDPOINT.

By JAMES STRATTON CARPENTER, M.D.,
of Pottsville, Pa.

Miss K., aged thirty-one years, has been under my treatment for mitral stenosis, which had been so long neglected by a homœopathic practitioner, under the care of whom she had previously been, that all the resultant congestive conditions of the internal organs that are so liable to ensue in the course of an untreated lesion of that character had been produced. Her condition at the time I was first consulted, some six months ago, was as follows: The patient was of slight build, of sallow complexion, with puffiness of the eyelids, and presented a typical, anæmic appearance. Auscultation of the chest yielded negative results. The respiratory murmur was but feebly heard; no râles or other abnormal sounds were elicited; it seemed as if the enfeeblement of the respiratory sound was due to deficient expansive power of the chest, which was narrow and contracted, rather than to any direct diseased condition. The heart's action was rapid, its frequency almost uncountable, with nearly complete absence of the first sound. The heart beat not less than 160 times per minute, while the pulse taken at the wrist was so thready as to be almost indistinguishable. There was heard a presystolic murmur, traceable backward to the angle of the scapula, but loudest at the apex. Among the subjective symptoms, particularly referable to the pulmonary and cardiac circulation, were cough and dyspnœa on the slightest exertion; palpitation, frequent and distressing, occurring independently of exertion; pain of intolerable character, described as lancinating, located in the cardiac area, extending also through the chest antero-posteriorly from sternum to interscapular region. Dyspeptic symptoms were prominent. Renal congestion was shown by frequent micturition, particularly troublesome at night, rhachialgia and scanty secretion. The bowels were inactive. The entire system thus loudly attested to some fundamental disturbance that, under "symptomatic treatment," had been altogether undiscovered and unprovided for.

Under a strict dietary, and with medical treatment, a pronounced improvement was made in the gastric and renal conditions; irritability was altogether overcome; the puffiness under the eyes disappeared; the color improved; and a marked lessening of the many nervous symptoms which had been so distressing to the patient was effected. The unsatisfactory results, however, from remedies directed to the regulation of the cardiac action was highly disappointing. While the relief of the dyspeptic phenomena obtained from a milk diet faithfully adhered to for several months had, it is true, lessened the frequency of the attacks of palpitation and the intensity of pain dependent upon the catarrhal gastritis, but little influence was exerted upon the cardiac condition. The pulse continued at just as rapid a rate and remained just as thready, notwithstanding the administration of digitalis, persisted in for some weeks. Tincture of strophanthus, in increasing doses, was substituted, but in no way lessened the unruly heart-action, which may be best illustrated by recalling the experiment of section of the inhibitory nerve of a rabbit's heart, yearly demonstrated before the medical classes by the professors of physiology; so, in this case, it seemed a clear instance of "runaway heart," that neither of the two recognized cardiac medicines could bring under control. These remedies having so utterly failed in influencing the disordered action of the heart, where was there hope of obtaining a remedy through the general system? The failure of strychnine to influence in any degree the cardiac ganglia seemed to close the door against further trial in that direction.

At this time when, in lieu of a better drug, I had again resorted to digitalis, it occurred to me to make trial of the chloride of barium, which had been highly lauded in The Medical News, by Dr. Hobart A. Hare, as a cardiac medicine, and as an excellent substitute for digitalis, by its action increasing the diastolic pause while it strengthened the systole—the very object sought in the present instance. I had employed the salt once before in a case of irritable heart of purely functional character, administering it in two-grain doses, three times a day, without the slightest effect upon the distressing palpitation from which the young lady suffered. In a second case it was administered in five-grain doses, three times a day, the patient being an old man in the second stage of pneumonitis; in him heart failure was threatening. Not the least untoward effect upon the system was noted, the irregular heart-action being brought under full control.

In the present case I considered myself perfectly safe in commencing the use of the chloride in the dose of gr. 1.6, three times a day, but my experience was such that in future I shall consider it a far safer plan to begin with a much smaller dose, a half fluidrachm of a one per cent. solution, as recommended by Professor Hare, as being the more prudent method of administration, as the sequel shows.

About ten o'clock in the evening of March 14th, I was hurriedly summoned to my patient, with the message that "she had been taken very sick." The barium chloride had been begun that day, and, as the message was so imperative, I permitted no time to be lost in answering the summons. On entering

the sick-room I found my patient presenting most alarming symptoms, the result of a gastro-enteritis, which, with all the distressing features, was more than eclipsed by the terribly depressant effects of the barium salt upon the heart. The pulse was scarcely definable at the wrist, coming in a feeble intermittent wave, and recording but 26 beats per minute! Auscultation revealed the heart acting tumultuously, with a heaving character, at if there were not enough blood obtainable to keep it in motion; its efforts to contract upon the almost fatally diminished volume of life-fluid were as 4:1 in the ratio of heart-action to radial pulsation. The patient presented a ghastly appearance. The face was deathly pale; the eyes were sunken, the lips of purplish color; the extremities were icy cold; even respiration was almost *nil*, and it required constant demands upon the patient to keep up the needed respiratory function, which, like that of the heart, was overwhelmed by the depressant effect of the chloride of barium. While awaiting the much-needed stimulants for which I had sent, even brandy not being available in this temperance stronghold, I thought each minute the smouldering vital spark would die out altogether. The intense abdominal pain complained of necessitated quick relief, and gr. $\frac{1}{8}$ of morphine, with gr. $\frac{1}{150}$ of atropine, was given hypodermatically, a larger dose under the circumstances not seeming justifiable. Previously to my arrival the patient had been vomiting and purging; after my coming, she was, at short intervals, seized with violent retching, there being no longer anything in the stomach; these efforts were followed by prolonged fainting attacks, from each of which I feared she would not rally. Treatment for shock was in the meanwhile being carried out to the fullest extent possible. External heat, frictions, ammonia inhalations were persisted in until the whiskey and carbonate of ammonia were obtained, when hypodermatics of the former were given at frequent intervals, the latter being administered by the mouth in five-grain doses every hour. For fully four hours I worked unceasingly on this plan, until the alarming condition began to yield and a little more regular heart-action was obtained. The respiratory function still needed considerable stimulation, and I finally left the house, giving strict injunctions not to let the patient sleep until I should have made my visit that morning, since, from the very beginning of the toxic symptoms, there had been almost uncontrollable drowsiness; and, if the patient were permitted to desist from voluntary respiratory effort, respiration would cease altogether, and stupor supervene, to overcome which would require unusual effort. I noted, also, that when the breathing was kept up, the heart's action would show a tendency to improvement; but with cessation of the respiratory act the radial pulse would fade entirely, the heaving action of the heart being for the time the only evidence of vital function.

At my next visit the condition of the patient was much improved, and, beyond a tendency to faintness when the head was elevated, there was little to recall the terrible experience of the previous night. I then obtained the following account of the events of the preceding day. The patient had taken two doses of the barium salt with no unpleasant result, stating that the medicine produced a feeling of drowsiness, so that for the first time in weeks she was able to obtain refreshing sleep during the afternoon. About six o'clock she took a teaspoonful of pulvis glycyrrhizæ compositus to overcome a constipation of several days' duration. The first unpleasant effects then showed themselves; she began to be sick at the stomach; there was profuse purgation, accompanied by severe pain of a burning character. At eight o'clock she took the third dose of barium chloride; an hour later the symptoms were so distressing that she called for assistance, the family having retired early that night. Even then the nature of the trouble was not suspected either by the patient herself or by her family; she attributed the disturbance to the effects of the laxative powder, which had at times acted somewhat similarly, and it was only when the vomiting and purging began to be uncontrollable and were followed by attacks of fainting that the family became sufficiently alarmed to send for medical aid.

Convalescence was undisturbed by anything unpleasant. The patient was confined to bed for one week. The diet was milk; the carbonate of ammonia and brandy were continued for several days, until the tendency to faintness already mentioned was overcome. The heart's action, which had been reduced during the attack to an extremely low rate, steadily improved, and, while the patient kept in bed, was full and regular, and did not exceed 84 beats per minute. After she was out of bed this was somewhat increased to about 100 per minute, but the pulse preserved its fulness and regularity. As soon as she resumed her household duties, I put her on the barium preparation in doses of a half fluid-drachm of a one per cent. solution, increasing the dose gradually until she is now taking two fluid-drachms of the solution, or nearly the same dose as that with which I began the administration, but with far more comfort to both patient and physician. She visited me recently at my office, and was in excellent condition of health, saying that she "never felt better in her life." She eats and sleeps well, suffers no pain about the heart, and attacks of palpitation have only occurred when she has omitted taking her medicine as directed.

In connection with this case I have made the following observations:

1. Barium chloride is a powerful irritant poison, of somewhat unreliable character when used medicinally. While I have administered it in two-grain doses without result, and, as in the case cited, it has been given in as large a dose as five grains, t. i. d., without causing any irritating effect, in the present instance the administration of less than two grains, three times daily, was productive of nearly fatal poisoning.

2. While barium chloride undoubtedly exercises a highly beneficial action in certain cases of cardiac derangement that may not yield to either digitalis

or strophanthus, it must be remembered that it is powerfully depressant to the heart; its administration should, therefore, be begun with the smallest dose consistent with the demands of the case, half a fluidrachm of a one per cent. solution being advisable as the initial dose, to be increased as required.

3. In toxic doses, barium chloride would seem to be not only a corrosive poison and a depressant to the action of the heart, but threatening to life by its effect upon respiration as well. In the present case the similarity of the respiratory phenomena noted to those presented in opium narcosis will have been remarked. Two possible occurrences must, therefore, be eliminated, viz.: Was there opium-poisoning present, either as a result of self-administration of the drug, or as a result of the hypodermatic use of gr. ⅛ of morphine sulphate that I gave the patient soon after my arrival? The first possibility, either as an accidental occurrence or otherwise, is negatived by the testimony of the patient herself to that effect. On the second point, I think that not only is the history of the case sufficiently convincing to the contrary, but very few would maintain that such overwhelming effects of the drug could result from so small a dose of morphine, even when given under the conditions that existed. While I gave it with some misgivings, owing to the desperate condition of the patient, her intense suffering necessitated its administration; as it proved almost immediately beneficial, not only in allaying the violent pain but also in quieting the distressing retching, which demanded quick relief, I could but consider it entirely justifiable. The following considerations, however, fully warrant the belief that opium-narcosis was *not* present as a factor in the history of this case:

(*a*) The absence of the "pin-hole" condition of the pupils, which should have been present were toxic effects of morphine produced. The pupils were only moderately contracted, and sensible to the light test.

(*b*) The same condition of respiratory failure was present *prior to* the administration of the morphine as was noted *subsequently* to its use.

Has, then, the chloride of barium a direct depressant action upon the respiration, or was the condition noted due to the secondary effects of the barium salt—the cerebral congestion dependent on cardiac failure?

4. In the employment of chloride of barium, the possible influence of purgative medicine should be borne in mind. Whether or not the drachm dose of the licorice powder had any effect in the production of the unpleasant conditions described in the present paper, I do not pretend to say; but, as barium chloride is irritating to the mucous membrane, the conjoined administration of purgatives should at least be followed by careful observation. I have recently used barium chloride in another case of heart disease, in which both mitral and tricuspid valves are chronically diseased, employing the minimum dose, but was obliged to discontinue its use on account of its irritating effect upon the bowels.

A KNIFE-BLADE FOUND IN THE BRAIN YEARS AFTER ITS ENTRANCE, DEATH RESULTING FROM OTHER CAUSES.

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THE unexpected finding of a knife-blade, firmly imbedded in the skull, and penetrating the brain to the depth of one inch, would seem of sufficiently rare occurrence to warrant the reporting of the case. The interest is heightened by the fact that the knife-blade had been where it was found for a number of years, without giving rise to the slightest symptom.

C. Capsule turned back from knife-blade. D. Adherent dura.

On the evening of February 12, 1890, a man was brought into the City Hospital, Brooklyn, by the ambulance surgeon, suffering from several bullet-wounds. One ball was lodged in the left thigh, another had passed through the same thigh at about its middle, while the third and fatal ball entered the abdomen on a line with the umbilicus, and about two inches to the left of it. When admitted, the man was suffering from profound shock, but, improving during the night, he was operated on in the morning, and the intestines, perforated in a number of places, were sutured. The wound was placed in the best possible condition, but, with all the precautions taken, the man died of general septic peritonitis on the evening of the 14th.

As it was a coroner's case, an autopsy was held the next day at 2 P.M. On removing the brain, I felt a

sharp projecting point in the posterior fossa, on the left side. At first, I thought that this was one of the so-called ivory exostoses, but, on dissecting the scalp away from the outer surface of the skull, I found a foreign body of some kind that had penetrated the skull. A close examination of the scalp was now made without finding evidence of any wound, recent or old. The section of skull shown in the cut was then removed, and I found part of a knife-blade, $\frac{5}{16}$ of an inch in width, projecting into the brain to the depth of one inch. It had entered the skull about $3\frac{3}{4}$ inches posteriorly to the left external auditory meatus, in the line of the occipito-parietal suture, penetrating the lower posterior portion of the occipital lobe. The point of the blade was ensheathed in a strong fibrous capsule, about half an inch thick, that was adherent to the brain and its membranes by old and firm adhesions. The brain in the neighborhood was apparently normal, save a very slight thickening of its membranes in the immediate vicinity of the knife-blade. The blade was black and corroded, and everything pointed to the fact that it had been in its position for a number of years. There was no depression or displacement of the bone, and the blade had evidently passed between the sutures, probably in boyhood, when the bones were softer, and the sutures not as firmly interlocked as in the specimen when removed. The knife-blade had been broken just on a level with the external surface of the skull, and the man never knew the extent of the injury, as he enjoyed the best of health up to the time he was shot.

After the autopsy I set about trying to learn just how long before his death the injury had occurred. From his wife and mother I learned that, to the best of their knowledge, he had never received any injury of a serious nature. He had always enjoyed good health, never having had even a headache, had always been in good spirits, and was considered an able-bodied workman at his trade, that of a plumber.

There are a few authentic cases on record of persons living for a longer or shorter time with foreign bodies in their brains. In the larger percentage of cases the foreign bodies were bullets, and in most of the reported cases these, sooner or later, caused the death of the victim. O. Callaghan reports the case of an officer who lived seven years with the breech of a gun, weighing three ounces, lodged in his brain (Erichsen's *Surgery*, vol. i. p. 728).

In the *Annual of the Universal Medical Sciences*, 1888 (vol. ii. pp. 299–301), in addition to a number of cases of bullet-wounds, there are reported two cases somewhat similar to that of mine. One case was reported by Dr. Wilson, in which a copper paper-file penetrated the right side of the occipital bone, near its junction with the petrous portion of the temporal bone, and passed for more than three inches into the brain; profound collapse, with stertorous breathing, followed, but the subsequent recovery was complete. H. C. Dalton reports a case of punctured wound of the brain, in which a knife-blade entered the temple three-quarters of an inch behind the external canthus of the right eye, and penetrated fully two inches. There seems to be no doubt that the knife-blade penetrated the brain. No explorations were made; antiseptic dressings and ice-bags were applied to the head, and purgatives and morphine were given. The recovery was slow, but was considered complete.

The instruments used in the cases reported probably did no more damage to the brain-substance than would the exploring-needle that many surgeons use. Moreover, the fact that the foreign bodies did not remain in the brain very materially lessened the gravity of the case. In my case we have the following prominent facts that make it of more than usual interest: 1. The wound was so slight as to escape notice when inflicted, and, from all I could learn, received no treatment, not even rest; 2. It gave rise to no symptoms whatever during the life of the patient; 3. The man was about thirty years old, and, in all probability, the blade had been in the location in which it was found for a number of years.

I think this case argues in favor of the treatment recommended by some authorities for penetrating wounds of the brain, *i. e.*, immediate cleansing of the wound and placing it in an aseptic condition—closing the wound without attempting to explore or remove the foreign body. In the war of Tonkin and Formosa this treatment was followed by a mortality of only 10 per cent. as contrasted with 60 per cent. in the war of the American Rebellion, in which all wounds were explored and attempts made to remove the foreign body.

The specimen from which the drawing was made is now in the museum of the Hoagland Laboratory, Brooklyn, N. Y.

ORIGINAL LECTURE.

THE HEART: ITS MURMURS, THEIR DIAGNOSIS AND TREATMENT, AND THE ACTION OF THE CARDIAC TONICS AS A CLASS.[1]

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LECTURE III.

Gentlemen: In the two preceding lectures we have carefully studied the various ways in which valvular lesions and cardiac murmurs are produced; also the methods at our command for accurately diagnosticating these conditions.

When we go over the chest of every patient in a regu-

[1] A series of lectures delivered at the New York Post-Graduate Medical School and Hospital.

lar and systematic manner—studying first the mitral indirect and direct areas, then the aortic indirect and direct, and determining as to the presence or absence of abnormal sounds, and the direction of transmission when present, in accordance with the rules already laid down—we are able to determine with positive accuracy whether murmurs are present or not.

From the result of this examination, plus the clinical history of the case, we are able to determine the character of the lesion or lesions in consequence of which the abnormal sound or sounds are produced.

By this method we can distinguish four murmurs almost as easily as we can detect a single and isolated sound. In fact, we are simply dealing with a single murmur at a time, although the final result of our observations may be the detection of double murmurs, both at the mitral and aortic orifices.

Having acquired this degree of skill in diagnosis, and with it having learned to recognize the exact pathological lesion present, we are placed in a much better position to consider the physiological and therapeutic action of the drugs that may be used to assist nature in compensating for the pathological and mechanical deficiencies of the heart, and thereby maintain the physiological and nutritive conditions of the system at large.

At this point, however, it must be assumed that nature has already subdued or removed from the system the infectious element that caused the endarterial or endocardial irritation, and that we have to deal with the cardiac murmur and the established lesion purely as a mechanical defect, which is to a degree stationary in character. Granting this, we can understandingly discuss the comparative merits of that class of remedies commonly regarded as cardiants.

It can further be asserted that, by augmenting the nutritive activity of the heart and increasing its working capacity to a degree related to the simple mechanical defect, the individual will be placed in a thoroughly good condition—in other words, in a normal state, so far as the action of the heart from a mechanical point of view is concerned. Physiologically, of course, there is always a certain degree of compensatory hypertrophy and some over-distention of one or more of the cavities of the heart, as well as a localized vascular engorgement at some point of the circulatory apparatus. This increased compensatory action of the heart prevents any material embarrassment in the workings of the physiological economy. If, however, at any time such an individual should be seized with an infectious disease, his nutrition, from any cause, becoming impaired, the vitality of the cardiac muscle will be rapidly reduced and the compensatory condition deranged to such a degree that the mechanical action of the heart will be seriously interfered with. Under such circumstances the prognosis is much graver than it would be in the absence of a cardiac lesion, even though the acute or infectious disease *per se* be comparatively mild in character.

Before proceeding further, it is necessary to formulate a standard by which the terms commonly employed, such as cardiac sedatives, depressants, stimulants and tonics are to be applied. By limiting the use of these terms much confusion can be avoided. By keeping strictly within sharply defined limitations there can be no question as to the exact action and the result to be obtained from the administration of one or more of these drugs.

1. *A cardiac sedative* is best defined as a drug or remedy that tends to stimulate a depressed, or quiet an irritable nervous system, so that it will assume a more perfect and uniform action, and in this way ultimately increase, as it were, the general innervating and inhibitory power of the entire nervous mechanism, thereby inducing a more even and harmonious performance of all the bodily functions. When this result has been accomplished, a heart, previously acting in a tumultuous and irregular manner, will be found to have resumed a normal and rhythmical action; whatever distressing symptoms may have been present as the result of the abnormal movements of the heart, will have been quickly dissipated.

The salts of bromine are probably the best examples of this kind of drug. They are often found to be of great service in regulating the tumultuous action of the heart in hyperæsthetic subjects. They are, however, of no avail when a truly mechanical defect, either functional or organic, has been developed.

2. *A cardiac depressant* is best defined as a drug that will at once and perceptibly depress both the force and the frequency of the action of the heart. This result is brought about by a direct influence upon the heart-muscle or secondarily through the nervous system.

This class is best represented by aconite, veratrum viride, and the vegetable acids. All the nitrates, nitrites, and potassium salts may be placed in this group, together with nitro-glycerin, amyl nitrite, etc. The last two and the potassium salts may be of great service in regulating a tumultuous and laboring heart in that class of cases in which an abnormally high tension in the arteries is causing an undue amount of resistance to the onward flow of the blood. In so much as the abnormally high tension is a causative factor in embarrassing the action of the heart, its diminution will seem to have stimulated and regulated the rhythm of the heart, although no direct or intrinsic action has been produced upon the heart or the nerve-centres that directly govern its movements.

3. *A cardiac stimulant* is best defined as a drug or remedy that calls into action the intrinsic or stored-up motor power of the cardiac muscle, but without directly affecting its nutritive condition. This result is brought about either by a direct influence upon the muscle-fibres through the intrinsic cardiac ganglia or by an extrinsic action originating in the cardiac centre of the medulla and transmitted through the centrifugal nerves to the heart-muscle.

The most typical example of this kind of stimulating action upon the heart is illustrated by the application of a high degree of dry heat to the integument directly over the præcordial area. By this application, without supplying any new substance to the system, the cardiac muscle is made to do more work simply by a reflex action transmitted to the heart through its nervous mechanism, the inherent vital or stored-up motor power of the cardiac muscle is called into more vigorous and effective action. So far as the work accomplished is concerned, this is equivalent to stimulation.

Owing, however, to the fact that neither the nutritive

condition of the system at large nor that of the heart in particular is augmented, this increased action of the heart, if continued, will soon result in deterioration of the cardiac muscle, equivalent to a poisonous action upon the muscle-fibres. In this instance the damage is brought about in a simple manner, as the result of increased muscular work without an equivalent increase in the nutritive supply.

The majority of drugs that belong to this class, excepting alcohol, are glucosides. As a rule, the cardiac stimulants are compounds of CHO that cannot be oxidized within the system to form nitrogenous elements; consequently they are non-nutritious. They are rapidly converted into carbon dioxide and water, during the process of which energy and heat are evolved, and, as it were, a reflex irritation is brought to bear upon the nervous system and heart. In this manner the working power of the cardiac muscle is temporarily augmented, but at the same time its nutrition is diminished; as a result, brought about either directly or indirectly, the muscle-tissue is poisoned, so that ultimately its vitality is greatly reduced, if not absolutely destroyed.

A few of the drugs in this group are toxic alkaloids, containing nitrogen. While theoretically capable, in the cycle of changes in the body, of being oxidized into the final products, urea, carbon dioxide and water, they are, nevertheless, poisonous, like many other proteid bodies, such as the toxic ptomaïnes and leucomaïnes. In passing through the system, these substances appear to have the property of temporarily exciting the heart-muscle to more vigorous action, but the result is transient and is rapidly followed by a decidedly poisonous action upon the muscle tissue proper.

4. *A cardiac tonic* is best defined as a drug or remedy that acts upon the heart intrinsically or extrinsically (usually in the latter way), or by a combination of the two; its ultimate result is the development of a higher degree of muscle power by the formation of an increased volume of muscle protoplasm, and not alone by simply calling into action stored motor power at the expense of the vitality of the muscular elements.

This class of remedies is represented by the drugs containing CHNO, such as caffeine, morphine, strychnine and atropine, and by the food-stuffs containing CHNOS, all of which are capable of being changed or oxidized within the system. In passing through the economy, these nitrogenous bodies aid in forming body-tissue, and are finally converted into the ultimate products of tissue-waste and excreted as urea, carbon dioxide and water. Cardiac tonics must first pass through a cycle of changes in the body that result in the formation of all sorts of proteid compounds, or, at least, these medicinal agents most positively retard the retrograde metamorphosis, despite the increased work. At this point it may be well to state that, although the atomic composition of these drugs will not warrant the supposition that in the small quantities in which they are used they are equal in tissue-forming power to the proteid substances taken as food, there is much clinical evidence of a positive kind which seems to prove that, while they do not constitute the most perfect food-stuffs and tissue-forming elements in passing through the cycle of change from their introduction to their excretion as urea, carbon dioxide and water, they do have a most wonderful power in developing and maintaining the nutritive vitality of the proteid elements of the various body-tissues and organs. To more completely illustrate this subject, the accompanying table has been prepared. This shows at a glance the active principles of the different drugs, their chemical composition, and their comparative actions and merits most clearly.

In defining the different classes of drugs, sufficient has already been said to indicate where the sedative and depressant cardiants can be used to advantage in the treatment of affections of the heart; consequently the drugs of those two groups will not be individually considered. We will pass directly to the study of the stimulants and tonics.

In the class of stimulants containing CHO, alcohol unquestionably stands first. The action of alcohol upon the heart can be summarized as follows: As a result of its oxidization within the system into its final excretory products, carbon dioxide and water, energy is rapidly evolved, by which the heart is influenced, either directly or reflexly through its nervous mechanism, in such a manner that the inherent working-power of the cardiac muscle is greatly augmented. Owing, however, to the chemical fact that the CHO elements that form the alcoholic compound are not capable of transformation by the physiological economy into nitrogenous substances, neither the body at large, nor the heart-muscle in particular, can, by the intrinsic influence of this agent, be directly improved in their nutritive functions. But as a result of the development of this new energy by the rapid oxidization of the alcohol, the nervous mechanism of the body is influenced in such a way that the action of the heart becomes stronger and the arterioles in general moderately dilated, so that a larger volume of blood is driven more slowly through the capillary system. If at the same time a sufficient quantity of proteid material is introduced into the nutritive channels, the modification in the movements of the heart, together with the moderately dilated condition of the arterioles, necessarily causes a larger volume of more highly nutritive blood to flow through the arterial capillaries in a given space of time; consequently the general nutrition and that of the heart-muscle as well is greatly improved. By this indirect and secondary influence alcohol may be looked upon as both a stimulant and a tonic to the heart. The latter term, however, is not justly attributable to the action of the alcohol alone, for the evident reason that when a patient is restricted to an alcoholic diet, or takes alcohol in large quantities, or to the extent that the digestion and assimilation of proteids is impeded, or the oxygenating capacity is overtaxed, a positively deteriorated condition of the system is at once induced.

To completely understand the increase and decrease of nutrition, either local or general, a clear conception of the methods by which Nature governs this physiological problem is absolutely essential. Briefly stated, it is as follows: that all nutritive interchange between the blood and perivascular tissue is effected through the *arterial capillaries;* that when the blood has passed this point and entered the intermediate and venous capillaries, all the nutritive interchange is practically at an end; that normally a given volume of blood, having a certain quality when passing at a definite rate of speed through the arterial capillaries with a given tension, will allow

CARDIAC STIMULANTS.

Drug.	Active principle.	Its form and formulæ.	Solubility in Water.	Solubility in Alcohol.	Action on the rapidity and muscular power of the heart.	Action upon the small bloodvessels, arterioles and capillaries.	Action as a diuretic.
Alcohol . . .	Alcohol.	C_2H_6O	.....	.....	Increases the working capacity; slows a rapid, increases a slow heart; muscle secondarily exhausted.	Slightly contracts the general arterioles; dilates splenic arcade; nutritive tone improved.	Slightly diuretic.
Digitalis . . .	Digitoxin.	$C_{21}H_{32}O_7$	Insoluble.	Sparingly.	Shortens systole; lengthens diastole; slows action of heart; increases muscle power, then poisons the muscle.	Vessels highly contracted in general; dilates splenic arcade; nutritive tone diminished.	With venous congestion, are good diuretics.
	Digitalin.	Glucoside $C_5H_8O_2$	Nearly insoluble.	Readily.	Shortens systole; lengthens diastole; slows action of heart; increases muscle power, then poisons the muscle.	Vessels highly contracted in general; dilates splenic arcade; nutritive tone diminished.	
	Digitalein.	Glucoside $C_{25}H_{40}O_{25}$	Freely soluble	Readily.	Shortens systole; lengthens diastole; slows action of heart; increases muscle power, then poisons the muscle.	Vessels highly contracted in general; dilates splenic arcade; nutritive tone diminished.	
	Digitonin.	Glucoside $C_{31}H_{52}O_{17}$	Readily soluble.	Sparingly.	Lengthens systole; shortens diastole; antagonizes digitoxin, digitalin, and digitalein, and poisons the muscle.	General arterial system and splenic arcade dilated; nutritive tone diminished.	Not diuretic.
	Digitin.	Glucoside . . .	.....	.....	No special action known.	No special action.	No action.
Convallaria . .	Convallamarin.	Glucoside $C_{23}H_{44}O_{11}$	Soluble.	Soluble.	Increases the length and force of the systole; slows action of heart, and poisons the muscle.	Arterioles dilated; increase of tension is due to increased heart-power.	Evidence contradictory.
	Convallarin.	Glucoside $C_{34}H_{62}O_{11}$	Insoluble.	Soluble.	No action on the heart, is somewhat purgative in action.	Not used to act on vessels; if it exerts action, it lowers tension.	No use.
Strophanthus .	Strophanthin.	Crystalline glucoside $C_{24}H_{34}O_{10}$	Soluble.	Soluble.	Lenthens systole; shortens diastole; slows action of heart; increases muscle power, then poisons the muscle.	Tension primarily unaffected; may be raised by increased heart-power.	May be diuretic by improving the heart, but not primarily.
	Strophanthadin	Glucoside . . .	Insoluble.	Insoluble.	Inert so far as known.	Tension primarily unaffected; may be raised by increased heart-power.	
	Ineine. (?)	Alkaloid	....	.....	Action given the same as that for strophanthin.	Tension primarily unaffected; may be raised by increased heart-power.	
	Strophantine(?)	Toxic alkaloid . .	Soluble.	Soluble.	Action given the same as that for strophanthin, but more poisonous to the muscle protoplasm.	Probably lowers tension; evidence uncertain.	Not diuretic.
Scoparius or Broom . .	Scoparin.	Neutral body $C_{21}H_{22}O_{10}$	Soluble.	.....	Exact action uncertain; possibly diuretic in nature.	.....	Not clearly stated.
	Sparteine.	Liquid alkaloid $C_{15}H_{26}N_2$	Insoluble.	Soluble.	Slows action; lengthens and increases force of the systole; shortens diastole; poisons the muscle tissue.	Contracts arterioles in general and in splenic arcade; nutritive tone diminished.	Not diuretic.
Adonis vernalis	Adonidin.	Glucoside . . .	Soluble.	.....	Action almost identical with that of digitoxin, but ten times more poisonous to muscle tissue.	Slight contraction of systemic arterioles; those in splenic arcade dilated.	Slightly diuretic.

CARDIAC TONICS.

Drug.	Active principle.	Its form and formulæ.	Solubility in Water.	Solubility in Alcohol.	Action on the rapidity and muscular power of the heart.	Action upon the small bloodvessels, arterioles and capillaries.	Action as a diuretic.
Ammonium . .	Ammonia.	Carbonate $N_3H_{11}C_2O_5$	Soluble.	Soluble.	Increases working capacity; slows a rapid and increases a slow heart; muscle not poisoned.	Slightly contracts arterioles in general and tends to produce normal tone.	Slightly diuretic.
Caffea	Caffeine.	Alkaloid $C_8H_{10}N_4O_2H_2O$	Sparingly soluble.	Sparingly.	Increases the force and frequency of muscular contraction; lengthens systole; muscle tissue nourished.	Contracts arterioles in general, but dilates those in splenic arcade; nutritive tone improved.	Markedly diuretic.
Nux vomica . .	Strychnine.	Alkaloid $C_{21}H_{22}N_2O_2$	Soluble.	Soluble.	Increases the force and frequency of the muscular contraction; systole lengthened; muscle unpoisoned.	Slightly contracts arterioles in general, but dilates splenic arcade; nutritive tone improved.	Slightly diuretic.
	Brucine.	Alkaloid $C_{23}H_{26}N_2O_4$	.....	.....	Same as of strychnine, but weaker in power.		
Belladonna . .	Atropine.	Alkaloid $C_{17}H_{23}NO_3$	Soluble.	Soluble.	Increases the force and frequency of the muscular contraction; muscle unpoisoned.	Marked contraction, including splenic arcade; nutritive tone decreased.	Not diuretic.
Opium	Morphine and sixteen other alkaloids.	Alkaloid $C_{17}H_{19}NO_3H_2O$	Soluble.	Soluble.	Slows a rapid and increases a slow heart; muscle power increased; systole lengthened; diastole prolonged, and muscular tissue nourished.	When vessels dilated causes contraction; when vessel contracted, causes dilation; general regulator.	Slightly diuretic.

of an interchange between the blood and tissue which is equivalent to the work accomplished, thus exactly repairing the loss resulting from the tissue or glandular work performed.

An unduly high or low arterial tension will so change the speed of the blood in these nutritive capillaries, that even should the quality of the blood remain the same the nutrition will fall below the normal standard. The high tension is the more dangerous of the two, for when general the blood passes so rapidly beyond the nutritive point that the system as a whole is, as it were, starved to death. This assertion is most beautifully illustrated by those cases reported of speedy death induced by the continued high tension that followed the uninterrupted administration of powdered digitalis;[1] also in the condition known as shock, in which the great bulk of the blood suddenly passes to the venous side of the circulation—this being now recognized as the chief pathological factor to be overcome in the treatment of that condition.

When the arterial tension is abnormally low, the disturbance in the nutritive function is not so quickly noted, and for a time it is even increased, but in both instances it is ultimately impaired until, finally, the glandular activity of the body is diminished and the nutritive quality of the blood very decidedly reduced. A thorough understanding of this physiological law helps to clearly explain many actions that follow the introduction of medicinal agents into the system. By taking advantage of this law and lowering or raising the tension, the nutritive processes can often be modified or changed to such a degree that pathological conditions can be dissipated and the part restored to its original standard; or, on the other hand, a normal condition may be converted into a pathological one. When in a perfect physiological condition, the system is continually making this vascular alteration to meet the constant changes in the nutritive quality of the blood and the varying amount of work that is to be performed by the different body-tissues and glands.

Both the high and low tension in the arteries are due to a similar cause, but differing in the degree of its intensity of action. In both the causative influence leads to nervous exhaustion. When the tension is heightened a hyperæsthetic condition of the nervous centres which govern the vaso-constrictors is produced, and, as a result, both normal and pathological influences tend to excite an undue volume of energy and an increased and often irregular innervating impulse is distributed through the vaso-constrictor nerves, thus inducing and maintaining the abnormally high tension. When the tension is lowered the nervous exhaustion is more complete. The normal or pathological irritation is not sufficient to stimulate the vasomotor centre and excite the vaso-innervatory impulses to the arterial wall, and from the loss of this action the contained blood distends the vessels and gives the erroneous impression of the existence of vaso-dilator nerves and influences. At times this exhaustion becomes so great that even the most powerful drugs at our command will not excite innervating impulses, and the patient, of necessity, dies.

In proportion to the quantity taken, alcohol, up to a certain point, has the property of meeting both these conditions, so that in the one case it will lower the tension and improve the heart's action, and in the other it will raise the tension and increase the working capacity of the cardiac muscle. In fact, in all cases in which the use of alcohol is kept strictly within the physiological limit its tendency is to bring the heart's action and the vascular tension to the normal standard or a little above. When alcohol is used within these sharply defined bounds, together with a well-regulated and purely nutritive diet, in the sense of tissue-formation, it is without doubt or question one of the most powerful therapeutic agents for good at the command of the physician. But if the alcohol is used continuously, and especially in excess, yielding as it does only heat and energy while it is rapidly being oxidized into carbon dioxide and water, it has a pronounced tendency to exhaust the oxygenating capacity of the system, and thus prevents a perfect transformation of the proteids, until finally all the functions of the body are decidedly changed, if not completely destroyed. This is most apparent in the nervous system, as evinced by the impaired mental faculty. Alcohol is, therefore, a drug that produces true starvation, and whenever used in excess, either for a short or long period of time, must of necessity alter the nutritive quality of the blood, change the action of the heart and the vascular tension, and ultimately become a potent factor in producing permanent pathological lesions. The quantity of alcohol taken and the degree of disturbance of proteid oxidization, and especially the latter, are the factors that will determine the rapidity with which these abnormal conditions are developed.

The well-known and often-demonstrated rapidity with which all the bodily functions are restored so soon as the excess of alcohol is withheld from the system and in its place the proteids administered and perfectly oxidized, shows quite conclusively that alcohol *per se* has no poisonous effect upon the body, but that it acts as all CHO compounds must when taken in excess. They are all quickly and easily oxidized, thus using up the oxygen taken in by the inspiratory act, leaving an insufficient quantity to accomplish the more difficult and complex act known as proteid oxidization. This naturally results in an incomplete metabolism of these elements and the development of an almost innumerable variety of abnormal and in many instances decidedly poisonous substances. The long list of poisonous ptomaïnes, leucomaïnes and toxines already discovered fully corroborates this assumption. These compounds are not developed out of the CHO substances, but originate directly from the CHNOS elements which have been imperfectly transformed. The varied action of this large number of abnormal and poisonous nitrogenous compounds upon the nervous system and functions of the body in a large measure affords not only a clear but rational explanation of the damaging effects upon the mental faculties which are so often, but erroneously, credited to the direct action of the alcohol. The nervous system, when over-stimulated by this large amount of heat and energy evolved by this sudden oxidization of alcohol, and having for its nutriment these toxic nitrogenous compounds instead of those perfectly formed, cannot work normally, but is of necessity compelled to act in the abnormal manner indicated. The variety of toxic compounds developed also explains the great number of abnormal manifesta-

[1] Oberstabsartzt, Deutsche militärärtztliche Zeitschrift, 1876.

tions that are from time to time developed in different cases and even in the same individual at different times. These facts are applicable to both the acute and chronic cases that have resulted from over-indulgence in alcohol.

Considered from a purely chemico-physiological standpoint, the damaging effects of alcohol upon the system are little if any greater than those that follow the administration of an equal quantity or an over-indulgence in any of the other CHO group of compounds. But owing to the almost instantaneous absorption and the lightning-like transformation of the alcohol into other chemical compounds within the system, its effects are more quickly and positively felt.

This influence, however, is almost as speedily dissipated, and leaves the nervous system in particular in an overworked and poorly nourished condition; in fact, so much exhausted that a growing demand for repeated and increased stimulation is induced to overcome this state of depression. This same condition is induced by all CHO compounds, but reaches its maximum degree in the case of alcohol.

The oxygenating capacity of the system is so speedily taxed by the introduction of alcohol that all the functions of the body are at first greatly augmented, then lowered and modified until finally they become decidedly subnormal. That the damaging effects upon the system which are found in conjunction with the free use of alcohol are not due to the direct influence of the alcohol *per se* upon the blood, tissues and glands, but is the result of the sudden tax upon the oxygenating capacity of the animal economy and the imperfect metabolism of the proteid elements, is certain. This is clearly proved by the elaborate experiments of Dr. Anstie, who found that after keeping a dog super-saturated with alcohol for days, and then introducing into the stomach a considerable quantity of alcohol just prior to killing the animal, the total quantity of alcohol that could be obtained from the dog by distillation of every particle of the animal's tissue, including the bones, hide and hair, was not more than one drachm, although several ounces had been injected into the stomach almost immediately before death. This kind of observation shows quite conclusively that alcohol as such is rapidly dissipated within the system; even when large quantities are taken into the stomach an infinitesimally small quantity is excreted from the body in its original form, C_2H_6O.

One such thorough quantitative experiment as this outweighs in value all the qualitative experiments that can be made with the most sensitive reagents that are capable of detecting minute quantities of alcohol.

Theories based upon the former experiments are sound and are in accord with clinical and pathological knowledge, while those based upon the latter become little less than gross fabrications.

The chief reasons why the cerebral disturbances and damaging effects are not so quickly developed after the introduction of all the other CHO compounds are, that they must first be digested in the alimentary tract and liver—as the grain is transformed in the malting and brewing house—and also that they are much more slowly absorbed by the entero-hepatic circulation in their course to the liver. Even there they are tardily converted into alcoholic compounds, yielding heat and energy, but slowly as compared with alcohol. While it may take twenty-four hours or longer to convert a given quantity of starch and sugar into alcohol and finally into its excretory product, carbon dioxide and water, a much larger quantity of alcohol may be so transformed in a much shorter length of time, possibly in a few minutes. Heat and energy are, however, evolved in both instances; starch, sugar and alcohol all yield the same excrementitious products, but without combining with the nitrogenous food-stuffs to form the proteid tissues of the system.

The starch, sugars and fats, as well as the alcohol, when taken in excess, have a marked tendency to disturb proteid-metabolism; the alcohol most rapidly, because when introduced it is always a stage further advanced in the transition and is capable of being directly oxidized. From this fact, that members of both groups can pervert proteid-oxidization in the same manner, we frequently see as the result of over-indulgence in any or all of the CHO compounds, exclusive of alcohol, disturbances that, when viewed from a purely chemico-physiological standpoint are found to be equally as damaging in their effects upon the system as those that follow the free and excessive use of alcohol. They do not, however, give rise to the striking condition known as intoxication, which makes a human being so revolting to his fellow-men, but they do produce insomnia, hypochondriasis, suicidal mania, and in fact all forms of insane delusions, symptomatic of changes that in their final results are often equally as damaging to the mental faculties and to life as those that follow alcoholic excesses.

When the quantity of alcohol administered is kept within the limits that do not interfere with the complete and perfect oxidization of the proteid compounds, the physiological functions of the body will not be impaired, but often very decidedly augmented. The alcohol, being rapidly oxidized within the system, with a comparatively small expenditure of oxygen, and at the same time yielding a proportionately large amount of heat and energy for the quantity of oxygen used, is found to be capable of maintaining body heat and energy with a small expenditure of vital force. This saving is effected in various ways; one is by sparing nature the necessity of first transforming starch and sugar into alcohol before they can be utilized by the animal economy.

When this process of forming alcohol-like elements has to be performed in the intestine, liver, and blood—instead of taking the alcohol from the malting and brewing house, it necessitates a large expenditure of glandular activity, energy, and the supply of a considerable quantity of oxygen on the part of the system, and even when accomplished the sum-total of heat and energy developed is small in comparison with the results obtained where alcohol is used.

In health, the development of this large amount of heat and energy with the comparatively small expenditure of oxygen and glandular activity is not so desirable and is apt to be carried to excess, but when a diseased process is developed and the system is suddenly overtaxed and its vital force lowered by the introduction of a foreign body, as a germ, ptomaïne, leucomaïne, or toxine, it becomes necessary to save oxygen and to harbor the vital resources in every way possible, the nutritive vitality may be maintained until the offending

element can be expelled. Under these circumstances, alcohol is of unparalleled service to the system, for by its action oxygen is saved, glandular activity conserved and the necessary expenditure of heat and energy to carry on the secretory and excretory work reduced to the minimum. In fact, there are times when the functions of digestion and absorption are at such a low ebb that nature is compelled to feed upon its own tissues or starve. If alcohol be administered at this time the body-heat and energy may be artificially maintained with a decided saving of oxygen and vital force. By this gain in oxygen, with stimulation of the nervous system, digestion, absorption, and assimilation are sustained, and a larger amount of a more perfect proteid-metabolism is accomplished; the nutrition of the body is improved, its vital energy raised, and its power to resist the inroads of infectious elements brought to the highest possible standard. It also enables nature to more quickly eliminate these poisons, thereby shortening the duration and diminishing the intensity of the pathological processes, thus often saving a life that without its use must be lost. It is by this same saving of oxygen, this increase in energy, this conservation of glandular activity and vital force that alcohol enables the system more perfectly to oxidize and assimilate the proteid elements of the food-stuffs; alcohol thus appears to sustain thoroughly or even increase the body-weight when the diet is insufficient. This favorable action, however, is only temporary in character and cannot be maintained indefinitely, but must be followed in due time by the requisite amount of nitrogenous food-stuffs or the bodily nutrition will ultimately fail.

In this light, alcohol becomes a valuable therapeutic agent in the management of many cardiac lesions, but in no sense can it be regarded as a food-stuff in itself. By improving the general nutritive condition in this secondary manner, and by regulating the heart's action and modifying the vascular tension, alcohol will often enable us to develop a compensatory hypertrophy of the heart-muscle more rapidly and more effectually than can be accomplished with any or all of the other therapeutic agents at our command.

In using alcohol it should always be borne in mind that it is rapidly oxidized, that it yields a large amount of energy, that it is a starvation compound and must have associated with it a liberal supply of nitrogenous compounds if the desired results are to be obtained. When alcohol is used, starch, sugar and fat should be omitted entirely or be taken in small quantities, otherwise nature will be deprived of the good effects that we are seeking to attain. We should also keep in mind the fact that where alcohol is used beyond the physiological limit it decidedly retards the oxidization of the proteid elements, lowers nutritive vitality, and the patient loses ground. When used in excess the effect is transitory; the functions of the body and especially those of the nervous system are exhausted instead of being strengthened, and depression is induced, with a constant craving for a similar kind of stimulation. Kept within these physiological limits, however, alcohol can never do harm but is a powerful aid to the system in disease and may often save valuable life when without it death must of necessity ensue.

The only sure guide to the use of alcohol in disease is found in the constitution of the urine and in its changes. When the digestion, assimilation and oxidization are perfectly effected, the normal standard will be maintained; but if disease attacks the system the reverse is the case. The relation between urea and uric acid is changed; the quantity of the former diminishes while the quantity of the latter increases. The alcohol should be administered until the urea rises and the uric acid falls to the normal standard. This accomplished, the heart's action and vascular tone will be placed in the best possible condition attainable from the use of alcohol.

CLINICAL MEMORANDA.

DEATH FROM ETHER.

BY MRS. CHARLOTTE B. BROWN, M.D.,
OF SAN FRANCISCO.

DEATH from ether is so rare that a record of each case seems of importance; hence the following report.

Mrs. H., a resident of Oakland, Cal., forty-one years of age; born in Indiana; had been married fifteen years, and had had two children, the youngest eight years of age; no miscarriages. Her mother is living and healthy at sixty-seven years; her father died of a fever at thirty years. Mrs. H. had never been a robust woman, and yet had never had any severe illness. About two years ago she began to suffer from uterine hemorrhage, and in the fall of 1889 consulted a gynecologist, who discovered and removed a small fibroid from the cervix. The operation was performed at her house, under ether, with prompt recovery.

In March, 1890, another fibroid, about an inch in diameter, was removed, also under ether, by the same physician, at his office. The parts were packed, and the patient was sent home in a carriage. On reaching home a violent hemorrhage occurred, and was with difficulty checked. She was blanched and never fully regained her former health and color. No mention of any other mass in the womb was made by the physician.

In January, 1891, and in March, profuse bleeding occurred. In March, Dr. C. Annette Buckel was called, and diagnosticated an intra-uterine fibroid, probably submucous. The hemorrhage was controlled and the patient liberally fed, and every means used to promote health and strength, with some success. But while the period in April was less profuse, in May it was more so, and her health began to fail. On June 1st she was sent to me for admission to the Hospital for Women and Children. The womb measured five and one-half inches and seemed to contain a single tumor. Examination showed heart, lungs and kidneys in as satisfactory a condition as was possible when general anæmia from loss of blood was so marked. I advised her not to delay entering the hospital. She did so, and was kept in bed during her menstrual period, when there was a moderate flow. Her appetite was good and her condition in no way unfavorable.

On June 10th a bundle of laminaria tents was introduced into the uterus and remained twenty hours. At 9.15 in the morning of the 11th, one teaspoonful of aromatic spirits of ammonia and one tablespoonful of whiskey were administered, and at 9.30 she was brought to the operating-

room. I listened to her heart as she was about to inhale the ether and heard nothing abnormal in the sounds. Her courage was good. Ether was given in a cone made of a towel, and she was very soon unconscious, the precise time not being noted. I irrigated the vagina, removed the tents, introduced a Barnes's dilator and distended it, followed by another of a larger size. I made a thorough examination of the mass, which was about three inches in diameter, attached by a broad base at the right posterior part of the fundus. I was working quite rapidly and was about to pass in the wire of the écraseur, when the assisting physicians said that her heart was beating poorly. A hypodermatic injection of tincture of digitalis and tincture of nux vomica, of each ten minims, was at once given. Her head slipped over the edge of the table, but no beat of the heart was felt. There were a few weak efforts at respiration for a moment or two, and then all was over. The faradic current was promptly applied and artificial respiration, by Sylvester's method, used. Hypodermatics of whiskey and ammonia were given repeatedly. These efforts were continued for an hour, but without avail. It was not more than five minutes from the first sign of collapse till she was dead, and not the slightest appearance of life was produced by all the means of resuscitation employed. I regret to be unable to record the quantity of ether used, but it was small, as she yielded to its action very promptly. It was less than a half-hour from her first inhalation before all was over.

The physicians present were Drs. Wanzer, Buckel, Smiley, LaFontaine, Nelson, Sherman and myself; all were most efficient in their labors in the case.

No post-mortem examination was made. The physician who was noting the pulse opened the patient's eyelid just after the first weak beat, and remarked that the pupils were widely dilated.

A CASE OF SKIN-GRAFTING FROM THE FROG.

BY GEORGE D. WESTON, M.D.,
OF FORT PAYNE, ALA.

IN a railroad wreck, George W., in addition to other injuries, was badly burned by steam. The parts burned extended from the nape of the neck to about four inches below the points of the scapulæ, and from the left shoulder-joint to the right, including at least two-thirds of the right upper arm, and especially the post-axillary fold. The inner third of the upper arm escaped. The burn was dressed with carbolized carron oil, the blisters having been cut just sufficiently to allow the serum to escape. On account of a dislocation of the clavicle, it was thought best for the patient to lie upon the back. The discharge was profuse and new blisters had to be opened each day. After a few weeks the skin and superficial fascia came off in large green sloughs; the discharge of pus was profuse and offensive, but the carbolized dressing soon stimulated the surface, so that healthy granulations sprang up and the whole surface was in good condition, but showed no tendency to the formation of skin. Some of the granulations were exuberant, and I had to cut them off with a knife and check their growth with nitrate of silver. The profuse discharge constantly weakened the patient and caused considerable elevation of temperature. I therefore had to use a great deal of stimulation. As something had to be done to induce the skin to form, I thought I would try skin-grafting, but the patient was so weak and had already so much surface granulating that he could not stand further denudation. I therefore thought I would try frog-skins. The white skin from the bellies of several frogs was removed, washed in clean water, cut into squares one-fourth or one-half inch across, and placed upon the granulated surface, the raw surface down. These were covered with oiled silk dipped in carbolized oil. The remainder of the back was dressed with benzoated oxide of zinc ointment. This was left for two or three days, the dressings, except the oiled silk, being changed at short intervals. When exposed, it was found that the grafts had a healthy, pink, transparent appearance, and the dressing was renewed as before. At the next dressing the grafts themselves could barely be distinguished, but, at the points where they were put on and for an inch or more around each, there was a pale bluish-white network that led me to infer that the grafts had been the means of inducing skin to form, but not in the same way I had seen in other skin-grafts—by forming a central island and spreading to meet that coming from the edges. From this time on, the patient continued to improve. The accident occurred March 22, 1890, and August 9th all had healed but a spot about the size of a silver dollar. At this time it was thought that a change of climate, by a visit to his old home near Boston, would complete the cure; so he was sent North on August 9th. He came back September 30th, with his back in a bad condition. Before going North, and during his stay there, large water-blisters would form, and these would have to heal like ordinary blisters. These proved very aggravating, both to physician and patient. As on his return I was away he was attended by my friend, Dr. Fowlkes, who used the benzoated oxide of zinc ointment that I had applied, and with fine success, so that when I returned, October 22d, the patient was nearly well again. From this time on, I dressed his back quite often, to look after the new blisters, and also to get the benefit of massage in causing the absorption of the excessive connective tissue that had been formed in the process of healing. This was especially marked on the right post-axillary fold. But by massage and use I think no operation will be necessary to obtain a fine and useful arm. There is at a few points a slight tendency to keloid-formation; otherwise the patient is perfectly strong and healthy. The scar has a thin tissue-paper appearance in most places, and as yet there is but little contraction.

A PRACTICABLE AND PAINLESS METHOD OF USING IODINE HYPODERMATICALLY.

BY A. O. SQUIER, M.D.,
OF SPRINGFIELD, MASS

IN THE MEDICAL NEWS of April 14, 1891, Dr. E. Fletcher Ingals, discussing the Shurly-Gibbes treatment of pulmonary tuberculosis, says: "It is usually best, excepting in advanced cases, to begin with iodine, though it is apt to cause considerable smarting," etc. In the *Therapeutic Gazette* for April, 1891, Drs. Shurly and Gibbes say: "The iodine solution gives considerable pain to some people, to others very little; but the gold solution gives little or none. We hope that a

solution can be made with lanolin, or something of that sort, which will obviate this objection in the case of iodine."

Having found the use of the iodine solution exceedingly painful, in one case so severe as to lead to the conclusion that if its use was persisted in, local anæsthesia, by means of spray or other more or less inconvenient method, must be resorted to, I found that the injection could be rendered absolutely painless by incorporating with the mixture as used by Drs. Shurly and Gibbes, a small quantity of creasote, or better, guaiacol. Another objection to the solution as prepared by Drs. Shurly and Gibbes is the large *quantity* necessary to be injected when it is desired to administer the full dose of one-half grain of iodine. This requires that sixty minims be introduced beneath the skin, and since the hypodermatic syringe, as usually made, has a capacity of but thirty minims, either the barrel must be unscrewed and refilled, the needle meanwhile being left sticking in the skin, or if the needle is withdrawn a second puncture must be made, all requiring time and causing additional pain. This might be avoided by increasing the strength of the solution, which, I infer, has been found impracticable, because of increased pain or other reasons. The object can be attained by incorporating iodoform in the solution to be used, and thus combined, the anæsthetic effect of the guaiacol is increased and prolonged. The formula that I have adopted after a number of trials as most eligible is as follows:

℞.—Eucalyptol, pure . . . . 32 minims.
Guaiacol, pure . . . . 16 "
Iodoform . . . . . 8 grains.
Iodine . . . . . 4 "
Ol. amygdal. dulc. (sterilized) q. s. ad 1 ounce.

Sig.—For hypodermatic use; 10 to 30 minims daily, or alternating with gold and sodium solution, as desired.

The anæsthetic properties of this solution are such that patients prefer its use to that of the gold solution, although the latter is nearly painless. Larger doses of the guaiacol and eucalyptol than is contained in the thirty minims of the above solution have, in my hands, caused excessive and exhausting sweating, with no proportionate benefit. The amount of iodine in this formula is the same as that contained in the Shurly-Gibbes solution, with, as will be seen, double that quantity of iodoform. Therefore the dose may be but one-third to one-half of that of the Shurly-Gibbes solution.

A CASE OF ANTE-PARTUM HOUR-GLASS CONTRACTION.

BY W. H. F. MILLER, M.D.,
OF CLIFTON FORGE, VA.

THE following is a brief report of a case of this very rare condition: On the evening of May 31st I was sent for to see Julia N., a mulatto, aged twenty-two, a primipara, who was in labor. On examination I found a left occipito-anterior presentation, with the os dilated to about the size of a twenty-five-cent piece. I left word that I would return in about an hour. Upon my return at about 10 o'clock I found the os as large as a fifty-cent piece and the pains irregular. I gave ten grains of sulphate of quinine, and retired to another room, telling the nurse to call me as soon as the character of the pains changed. About half-past twelve I was called and found that the second stage had set in, the pains being still slow and irregular, but decidedly expulsive. In half an hour the occiput was well into the inferior strait. During the next half-hour there was no advance whatever, though the patient appeared to have good pains. An examination did not show any cause for the arrest of the fœtus, either from abnormal parts in the mother or a too large head in the child. I therefore looked elsewhere, and found that during a pain the womb was divided into two spherical parts by a constriction about the middle, the two parts being about the same size. The constriction was constant, but the tension was increased during the pains. The fundus of the womb did not contract at all, and, as far as I could make out, the only change in the womb during the pains was the tightening in a transverse direction of this band of muscle. I applied one hand to the fundus and, for about fifteen minutes, pressed downward during each pain, but without any appreciable advance of the head; failing with moderate pressure to elicit any response from the womb, I stood up, and with each pain I placed both hands on the fundus and pressed downward and forward with as much force as I dared employ. The result was that after one or two pains the head began to advance and the womb contracted normally, except that the segmentation was very distinct even at the height of the pain. I left off pressure just as the head was ready to pass over the perineum, but the fundus again failing to act, I again continued the pressure, and the child, a medium-sized girl, was born in a few minutes. I examined the womb carefully after the end of the second stage, but could find no difference from the condition of the womb in an ordinary case. Slight traction on the cord, combined with expression, brought away the placenta without any trouble. The woman made an uninterrupted recovery.

Hour-glass contraction in the third stage of labor is a very common occurrence, and in these cases we have a contraction about the internal os; but in the case I have reported the contraction was at the centre of the body of the uterus. It seemed as if someone had a stout cord tied about the womb and that at stated periods the ends were drawn taut. There was, of course, no expulsive effect to the contractions, because the muscles merely seized the child and held it fast, thus rendering any advance impossible. I believe that only a single fasciculus of the circular muscles took part in these contractions, as the band was very narrow. The fundus, except under the stimulus of violent pressure, was inactive, yet after delivery the whole womb contracted very nicely. Of course, I expected to have difficulty in the third stage, yet there was no apparent extra contraction at the internal os. I gave ergot when the head was born, and this may have caused a regular contraction.

A METHOD OF CONTROLLING UTERINE HEMORRHAGE.

BY BRUCE PEDEN, M.D.,
OF BLOOMFIELD, ARKANSAS.

AFTER having vainly tried all ordinary methods, such as the employment of ergot, injections of astringents, etc., I recently controlled a severe case of uterine hemorrhage

by the following method: I took an ordinary rubber condom and introduced into it an ordinary male catheter, fixing the open end of the condom securely around the staff of the catheter by wrapping it several times with stout thread. I then adjusted a common syringe to the catheter and introduced the latter, carrying with it, of course, the condom, into the cavity of the uterus up to the fundus. This left the lower end of the rubber bag about on a level with the external os. I then proceeded to inject water into the cavity of the condom, speedily checking all hemorrhage. I could not have wished for a better result. I think this will be found a valuable means of arresting uterine hemorrhage by all who will give it a trial.

I shall try this method of arresting post-partum hemorrhage, by having a suitable apparatus made upon the same plan, with a larger bag, etc., and have the catheter of rubber, so that it can be left in position without inconvenience. The bag could, of course, be inflated with air, hot or ice-water, if necessary; in the first instance avoiding the weight of water, in the latter getting the benefit of heat or cold, as desired. The contents of the bag could be allowed to escape gradually, thus permitting the uterus to contract by degrees. The bag could be left in position for a considerable length of time without danger. I think this will have several advantages over intra-uterine tamponnement by means of strips of gauze, as suggested in THE MEDICAL NEWS of January 24th.

A NEW USE FOR ARISTOL.

BY JAMES J. LEVICK, M.D.,
OF PHILADELPHIA.

IN a case of poisoning of the hands from *rhus toxicodendron*—poison oak—recently under my care, which had reached the vesicular stage and was attended with much swelling and burning, the happiest results promptly followed the free dusting of the powder of aristol on the affected parts. The change was almost magical, so sudden and so prompt was the relief afforded. Might not this powder, applied in the early stage of the disease, do much toward preventing the ulceration and pitting of variola?

1200 ARCH ST.

MEDICAL PROGRESS.

For Vomiting after Chloroform Inhalation.—LENEWITSCH (*Med. Obstet.*, No. 1, 1891) succeeded in checking the obstinate vomiting in six cases following chloroform-narcosis by washing out the stomach with a one-half to two per cent. solution of soda. Not only was the vomiting at once controlled, but the general condition also improved.—*Centralbl. für Chir.*, May 23, 1891.

Primary Erysipelas of the Tongue.—GAREL (*Annales des Malad. de l' Oreille, etc.*, May, 1891) reports the case of a laborer, thirty-seven years old, who presented considerable swelling of the tongue which began at the anterior half, at a point of ulceration, the result of the influence of a carious tooth. The swelling was so great that the patient could not close the mouth, and there was profuse dribbling of saliva. In addition, there was a sense of debility, headache and fever. In the course of a few days the pharynx, and in succession, the cheeks, the nares, the eyelids, the ears and the scalp became involved.

Pleuritic Effusion containing the Bacillus of Eberth.—FERNET (*La Médecine Moderne*, May 21, 1891) reports the case of a boy of seventeen, who, two months after an attack of typhoid fever, developed a pleurisy, with serofibrinous effusion, in which the bacillus of Eberth was detected. In five other cases of pleurisy associated with typhoid fever, the bacillus was not found. Nevertheless Fernet believes that, in all, the pleurisy was dependent upon the bacillus of Eberth, and proposes the name typhoid pleurisy.

Hæmaturia due to Distoma Hæmatobium.—At a recent meeting of the Berlin Medical Society, NITZE (*Prager medicin. Wochenschr.*, May 13, 1891) presented a boy, with vesical tenesmus and burning micturition of a cloudy urine containing red and white blood-corpuscles, pus-cells and the characteristic ova and living embryos of the distoma hæmatobium. The boy, as well as two brothers who suffered similarly, had lived in Africa. A tumor in the bladder of the eldest brother, a result of irritative proliferation from the presence of ova, was removed by a supra-pubic operation; the subsequent improvement was only temporary, as the actual cause of the disorder is constituted by the presence of living distoma in the portal vein or in the perivesical veins.

The Influence of Epilepsy upon Secretion.—FÉRÉ (*La Méd. Mod.*, May 21, 1891) relates the case of an epileptic woman, nursing an infant, in whom withdrawal of the bromides was followed by a return of the seizures and cessation of lactation.

The Treatment of Aneurism of the Aorta by Potassium Iodide.—BALFOUR (*British Medical Journal*, June 6, 1891) details one case of aneurism of the aorta and makes reference to several others in which most satisfactory curative results were obtained by the administration of potassium iodide. To cure or even to improve an aneurism by the administration of the iodide the patient must not be starved, but must be well fed. The cure is effected by an hypertrophy of the walls of the sac, not by coagulating the blood within the sac, and is interfered with by lowering the nutrition. The iodide may possibly have some effect in producing hypertrophy of the fibrous tissues; indubitably, its most important effect is to cause a permanent lowering of the intra-arterial blood-pressure. To obtain so important a result it is not necessary to give the iodide in large doses. The proper course to pursue is to put the patient in the recumbent posture for several days, so that the normal pulse in recumbency shall be five or more beats lower than in the erect posture. Five grains of potassium iodide (sodium iodide has not the same effect) in some bitter infusion are given every eight hours, the pulse-rate being carefully observed daily at a stated time; after two or three days the dose of the iodide is increased to ten grains every eight hours. In this way the dose may be gradually increased until the pulse-rate is observed to rise; then the administration is withheld for a day and the previous dose resumed. As soon as the pulse-rate increases, the benefit ceases and the constitution begins

to suffer. But seldom is it necessary or advisable to increase the dose beyond ten grains every eight hours; commonly enough five grains suffice. The maximum of benefit is obtained from a dose just below that which lowers the blood-pressure so far as to cause the pulse-rate to rise. The remedy is administered every eight hours for two or three months. At the end of that time it need be administered but every twelve hours. The length of time the remedy should be continued depends upon the size of the aneurism when the treatment was begun. At least from three to six months are required to make the patient comfortable.

The Determination of the Number of Bacilli in Tuberculous Sputum.—Dissatisfied with the current methods of counting the number of bacilli in the sputum of tuberculous patients, NUTTALL (*Bulletin of the Johns Hopkins Hospital*, May–June, 1891) has devised a means for which he claims simplicity and accuracy. The total amount of sputum expectorated during twenty-four hours was caught in covered, scrupulously clean, conical glasses. According to the degree of viscidity of the sputum, a varying amount of 5 per cent. caustic potash solution was added to it (from one-sixth to an equal volume); after the sputum was rendered perfectly fluid, water was added to dilute the mixture. The sputum was then poured into a perfectly clean, wide-mouthed bottle containing fine (sterilized) gravel or broken glass. The conical glass was then rinsed out and cleaned of any still-adhering sputum by means of a measured amount of the caustic potash solution, which in turn was added to the sputum in the bottle. The latter, closed by a rubber stopper, was then transferred to a shaking machine, in which it was vigorously shaken for five minutes and then allowed to stand until the caustic potash had had time to act. Very viscid sputum was then warmed at body-temperature. As soon as the caustic potash had rendered the sputum homogeneous a measured quantity of water, usually an equal volume or less (preferably distilled), was added and the mixture again shaken. The sputum having stood for from two to four hours, was again shaken for from five to ten minutes. By means of a special apparatus, drops of the mixture of approximately equal size were spread upon cover-glasses, dried and surrounded by a delicate ring of a paint composed of lamp-black and serum. Over all was sprayed a thin film of diluted serum, which was fixed by heating the cover-glass at a temperature of from 176° to 194°. The caustic potash was extracted by alcohol. The specimens were stained with the Ziehl-Nielsen carbolized fuchsin and decolorized by alcohol and a mixture of water, 150 parts, alcohol 50 parts, and sulphuric acid from 20 to 30 drops. In counting, a square diaphragm, with an eccentric hair-line, was used with the eye-piece of the microscope. The fields were controlled by the use of a revolving disc in connection with the screw of the mechanical stage. Recording was facilitated by means of an automatic register. The method promises to be useful also in the study of bacterial cultures.

Œsophagotomy for the Removal of a Tooth-plate Long Impacted in the Œsophagus.—FURNER (*Lancet*, May 2, 1891) has reported the case of a woman, forty-four years old, in which, five and a half years before, a tooth-plate had slipped into the œsophagus. There was dysphagia of varying degree and occasional dyspnœa. A probang introduced into the œsophagus encountered an obstruction ten and a half inches from the teeth. Attempts to remove the plate by means of forceps were unsuccessful. Three months later œsophagotomy was performed. A portion of the plate was imbedded in the wall of the œsophagus. Considerable traction was required to bring the plate away. About an ounce of arterial blood escaped after the removal. No nourishment was given by the mouth during the first two days, but four ounces of pancreatized beef-tea were administered per rectum every four hours. On the third day an attempt was made to introduce food into the stomach through an elastic catheter passed from the mouth, but the milk was rejected. The attempt was repeated on the fifth day with a like result. On the evening of the fifth day the patient was raised in bed, and leaning slightly forward, was given milk to drink, which she swallowed and retained. Recovery now progressed favorably. On the twenty-first day after the operation the patient swallowed bread and milk; on the twenty-fourth day she took fish; on the twenty-eighth day the wound was healed.

Pilocarpine in Labyrinthine Disease.—In a paper read before the Philadelphia County Medical Society, DR. S. MACCUEN SMITH stated that he had treated with subcutaneous injections of pilocarpine hydrochlorate forty-seven cases of a greater or less impairment of hearing —in some there being almost entire deafness. The dose usually employed was one-sixth of a grain, although one-fourth of a grain was frequently necessary. In view of the possible danger to life in administering full doses of pilocarpine, some authorities advise the use of atropine or strychnine in conjunction with pilocarpine. This is a proper and safe precaution, and should be employed in suitable cases; yet in the greater number this was not found essential. As patients cannot usually stand the daily injection, an injection was made every second day, it always being *insisted* on that the patient remain *in bed* for from three to five hours after each injection, as the resulting perspiration continues for that length of time, and any undue exposure or exertion may cause unfavorable symptoms. The injections are continued until five, eight or ten have been given, and then, if additional ones are required, they may be administered at intervals of from five to ten days, as the symptoms indicate. As a result of his observations Dr. Smith has arrived at the following conclusions: Age and sex have no influence on the success or failure of the treatment of labyrinthine disease by means of pilocarpine, subcutaneously; in recently developed deafness, with tinnitus, this mode of treatment is much more promising of success than in cases of longer duration; cases of chronic suppurative otitis media, with some degree of impaired hearing, resulting from the exanthematous fevers, are not proper cases for treatment by this method; deafness, vertigo and tinnitus, in the course of syphilis, seem to be especially benefited by the subcutaneous injection of pilocarpine; good results can only be obtained from the full physiological effect of the drug; profuse diaphoresis must be obtained in every case.

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THE AMŒBA COLI.

THE interest of the subject of rhizopods as parasites has of late years received an important impetus from the study of the amœba of dysentery, or, as it has been designated, the amœba coli. The credit of first observing amœbæ in stools is due to LAMBE, who described such organisms that he had found in the dejecta of a child suffering with dysentery; but to LÖSCH belongs the credit of establishing these as definite parasitic organisms. The investigations of LAMBE, published in 1852, seem to have called forth no comment, excepting from LEUCKART, who, in his work on animal parasites, referred to them, but regarded the objects seen as merely altered intestinal epithelium. In 1873, however, LÖSCH, at St. Petersburg, discovered in the stools of a case of dysentery, amœbiform organisms resembling those of LAMBE; but, after a description that to this day stands as a model of scientific accuracy, concluded that the amœba he had discovered was different from that of LAMBE, and from its seat in the colon he named it the *amœba coli*. After a lapse of another ten years the subject was revived by KARTULIS, at Alexandria, and since his first publication in 1885 reports extending and confirming our previous knowledge have been made in all parts of the world. In Italy, GRASSE, PERRONCITO and LONTINO; in Austria, KLAVA; in India, CUNNINGHAM and LEWIS; in Germany, KOCH and GAFFKY; and in America, OSLER, COUNCILMAN and others—have each added facts of interest in the study of this organism.

Biologically the place of the amœba is not definitely fixed, nor can this indefiniteness be cleared up until a fuller knowledge of its cycle of life within and without the human body has been obtained. So much, however, may be taken as definitely determined, viz.: that we have to deal with an amœba distinct in all important characteristics from the other members of its family; and as to habitat it is probably never observed outside the living body and in the excretions of man and a few animals. According to LÖSCH, the most closely allied form is the *amœba princeps*, which differs in size, movements, and chemical reactions from the amœba coli. The size of the amœba coli varies from 19 to 35 μ, that of the amœba princeps from 20 to 60 μ; the pseudopodia of the amœba coli are projected and withdrawn in the same line, those of the amœba princeps are returned by a movement along the periphery of the body, with reduction in size until the pseudopod has entirely disappeared; by alcohol the nucleus of the amœba coli is made less visible, that of the amœba princeps more visible. These facts, with the added observation of a peculiar flowing of the granular protoplasm toward and into the pseudopodia, and a common vacuolation and distinctive granulation, render it certain that this organism is one hitherto unknown and undescribed. No further facilities appear to have been afforded LÖSCH for the continuation of his studies, and it remained for KARTULIS to utilize the abundance of material at Alexandria, and to clear up several important points in the life-history of the organism. Convinced by the uniform occurrence of the amœba in large numbers in the stools of tropical dysentery that there is more than mere coincidence or passive agency in this, he was in his subsequent labors led to study the stools of other diseases, and also to make experimental investigations as to pathogenicity. His statement (*Virch. Arch.*, Bd. cxviii. S. 97) that he has found the amœba in 500 cases of dysentery, but never in any other disease, should it receive confirmation from the investigations of others, will, if nothing more, go far toward establishing diagnostic value. But we must here interject the testimony of MASSINTIN, who, working

in the laboratory of LÖSCH, at Kigen, found amœbæ in the stools of five cases of various intestinal diseases not regarded as dysenteric; and, at the same time, we may add that the claim of KARTULIS that the finding of these forms is sufficient to establish the diagnosis of dysentery, is, in the present state of our knowledge, not warranted.

As to pathogenicity, it is of interest to note the recent statement of COUNCILMAN, that as in pneumonia, so in dysentery, there may be a variety of causative agents; and, consequently, if in certain cases the amœba be proved absent, in others it may still have great significance.

The anatomical distribution of the organism is also suggestive. First seen in the stools, it was next discovered in an intestinal ulcer by LÖSCH, in the pus of liver abscess by KARTULIS, in the bloodvessels of the liver by KOCH, and finally in the expectoration of cases of liver abscess and diaphragmatic perforation by OSLER. These facts, and the uniformity of their occurrence, together with the common observation of bacteria, blood corpuscles, and all manner of débris within the amœba, lends some probability to the view of KARTULIS that liver abscess results from a migration of the bacteria-laden amœbæ through the blood-paths into the liver. But little is proved as regards the causation of the dysentery, and in no sense do the facts warrant the further assumption of KARTULIS that the pyogenic bacteria thus transported to the liver can excite suppuration only in areas degenerated and prepared for suppuration by the action of the amœbæ.

Of great interest and value are the experiments on animals. By injecting *per rectum* mucus from the stools of his case, LÖSCH was able to set up gastro-intestinal disorder in one of four dogs, and he found in the excreta of this animal large numbers of the amœbæ that had previously been wholly absent. Latterly KARTULIS has succeeded in producing experimental dysentery in cats by similar injections with mucus of the dysenteric stools, as well as with pure (?) cultures of the amœbæ which he has obtained in straw decoctions. He failed in dogs, guinea-pigs and other animals. These experiments, though highly interesting, cannot be considered demonstrative, because they fail in the non-exclusion of other organisms that may have been injected at the same time with the amœbæ; and they also fail from want of uniformity in the results obtained.

A careful and unprejudiced review of the literature of this subject would seem to indicate the probable pathogenic significance of the amœba coli, and it may be credited with a diagnostic value of a fair degree of certainty. It may be added that at least in one case its presence has made it possible to diagnosticate an unsuspected liver abscess, and in similar cases it may hereafter prove of like value.

THE ADVERTISER.

IF it be thought extreme to say that the medical profession in the United States is at the parting of the ways as regards the adoption or rejection of advertising practices by the physician, it cannot be held an exaggeration to say that a certain number of the members of that profession are always a little more than ready to take the left-hand road. Slyness, cunning, the ease of concealment of indirect methods of advertisement, perhaps also a general lowering of ethical standards, make it progressively more difficult to deal with those who combine an itching for public notice and selfish gain with a deplorable want of self-respect and professional honor.

We all know them perfectly well—these fellows that get themselves and their doings into the daily papers—and we understand exactly how the reporters get possession of the facts. It is the men of a certain well-understood type of character that are thus deceived by their hospital-residents and the enterprising reporters. The honest man has no difficulty in shutting off the reporters and controlling his assistants. We know also that they cannot be caught, and they themselves know it quite as well. Moreover, it is equally well known that those who have the ability to put a stop to advertising have not the moral courage to do it. It is a strange lethargy—a sort of sleeping-sickness that seems to deaden the professional conscience and hide from it the seriousness of its disease. There are to-day two or three fatal tendencies benumbing and dragging us toward ruin—the hospital-abuse, the compromise with open quackery outside, and with concealed quackery inside the profession. But circulating in the body professional there is a more subtle poison, and one far more dangerous than either of these. This is the rule-or-ruin policy of men intellectually and immorally strong. It is but another outcropping of the dominance of the modern hotly-pursued ideals of shrewd greediness united with unscrupulousness—ideals that are ruinously active in political and mercantile life.

In medicine it is distinctly a new phase, and one that it were better to estimate at full value. It must be squarely met and judgment decisively pronounced upon it. Early in his medical life a man will range himself with one party or the other; consciously or unconsciously he will join the party of the scheming pushers or the party of the honest workers. *Gleich und gleich gesellt sich gern.* The success of one unscrupulous politician debauches by example a hundred imitators, and concealed or brazen advertising becomes an art cultivated with persistent zeal. The novel aspect of the case consists in the fact that this species of advertiser is not scientifically a fraud or a quack, but it is a part of his stock-in-trade to be well abreast of scientific progress. He will swim with the tide, adopt the pseudo-scientific craze of the hour, even profess the greatest interest in genuine medical science, cultivate technical skill, and so forth. All this looks to success, and success, regardless of means and methods, is his sole aim. To reach it he will "wire-pull" himself into official positions, become a teacher, professor, visiting physician to hospitals, and finally spread the reports of his cures and wonderful surgical operations before the admiring gaze of the gaping newspaper-reader. The young physician looks on amazed that the censors of medical societies to which the advertiser belongs ignore these facts, and the young man says it is only the little fellows, they who need it most, that dare not advertise, and the young man at once resolves that the rule shall mighty soon be circumvented. In the meantime the "Boss TWEEDS" of medical politics are asking with ever bolder effrontery, "What are you going to do about it?"

Let us emphasize the patent fact that the evasion of action, the shirking of evident duty, and the permission of silence will never cure the evil. It is upon this cowardice that these cunning schemers count, and it is the condition of their success. As we all know, there is one way and only one way of making an end of all this. The respect or the supposed respect and comradeship of one's fellows and equals is at once the motive of true ambition, and in this case the absolute *conditio sine qua non* of professional success. Expel a few of these advertisers from honorable medical societies and there will be a sudden change in their manners and their methods of achieving professional success. Seeming harshness in such cases is not real harshness; it is for the final good even of the advertiser himself.

ALCOHOLISM.

THERE are extremists upon all debatable questions. The truth, however, can be arrived at only by impartial discussion and broad observation. It should not be perverted by blind fanaticism, nor should it be obscured by ignorance. Illiberalism is a bar to progress, and can only result in evil.

There are well-meaning persons who insist upon calling the excessive use of alcohol disease. It were as justifiable to similarly designate excessive smoking, or the persistent, injudicious indulgence in a favorite article of diet. Indolence, theft and immorality are as much diseases.

The excessive use of alcohol may be considered a morbid habit, in the same way as is the addiction to morphine, or opium, or cocaine, or tobacco, or coffee, or tea. The results of the habit and the sequelæ to which it gives rise must not be confounded with the influences that lead to the habit.

Apart from all prejudice, alcohol has legitimate uses. It is a valuable medicament. Properly administered, in conditions of low vitality, it is not merely a useful stimulant; it is also a valuable food, its efficacy depending upon its ready combustion and the production of force.

It were as rational to banish from the materia medica opium or strychnine, or caffeine or cod-liver oil, as to exclude alcohol; but it may be added that the materia medica is the exclusive place for the agent. Like most medicaments, it is powerful for evil as well as for good, and its administration should be under the control and guidance of competent persons. Its indiscriminate use should no more be permitted than should that of opium or strychnine.

That even the medicinal application of alcohol is abused cannot be contradicted. The same criticism may be applied as well to digitalis and to opium, but no one would ask that the use of these be proscribed and none would claim that their excessive use was an evidence of disease.

Recognizing the far-reaching evil results to which the injudicious, or even the judicious, administration of such medicaments as alcohol, opium, morphine, cocaine, chloroform and ether may give rise, the physician must exercise the wisest discretion in the use of any and of all of them.

From the social and economic point of view the remedy for the abuse is as difficult as is that for the excessive use of tobacco or for prostitution.

CORRESPONDENCE.

HOMŒOPATHY.

To the Editor of THE MEDICAL NEWS,

SIR: In reference to your editorial article on the "Homœopathic Convention," which informs your many readers that THE MEDICAL NEWS has decided opinions concerning homœopathists, I wish to draw your attention to a few undeniable facts.

Let any scientist carefully study the steady advance of medicine during the last century, and especially the last decade; let him note the progressive march toward that goal, so much desired, so much fought for by all medical minds, the establishment of medicine as a science, combined with the art to carry out its dictates—and he must acknowledge that of all the eminent men that have led us in this earnest search for truth, not one was a homœopath. Whether we enumerate the instruments of precision to-day employed in the investigation of disease, whether we take up the astonishing results obtained by modern physiological study, or whether we let pass before our view the "dawning of the new day," the revolution in the pathogenesis of infectious disease, we must invariably answer the question, *Did a homœopath contribute one iota to these successes?* with an imperative, *No!* The stethoscope, the self-registering thermometer, the sphygmograph and all the many instruments of precision enabling us to note the slightest deviation from health, were invented by regular physicians. The profound researches that led to the demonstration of the ptomaïnes and toxalbumins, that showed us the intricate metabolic process underlying the function of each individual cell, the wonderful unravelling of the network of paths, apparently so confused and yet so clear and definite, uniting the cortical centres and all the ganglia with every part of the animal organism depending upon them—did a homœopath participate in the minutest portion of them? No.

And when we finally come to bacteriology, the latest addition to our science, yet small but destined to cause the greatest revolution ever set in motion in any branch of human knowledge: who proved to us the cause of infectious diseases? Who made the first step in the direction that is bound to lead us to the total prevention and the complete cure of those zymotic diseases which have decimated mankind for thousands of years? No homœopath, for certain.

But read their journals, watch the proceedings of their debates! They adopt the results of our researches and make use of our discoveries without the least right and without hesitation!

Has there ever been an instance in which any result obtained by homœopaths in their so-called investigations has been adopted by the regular profession? Can anyone name any invention, any discovery, anything that proved a boon to humanity, that became the property of the whole civilized world, that has originated in homœopathy?

Only one principle—*similia similibus*—brought them adherents. And if we remember, that in its application Hahnemann quoted the itch and advised, therefore, the powdering of the crusts that developed in consequence of the scratching, and the infinitesimal dilution of this powder used internally as the sovereign remedy against a disease that *our* research soon after proved to be due to a parasite, easily destroyed by a little potash, soap and sulphur, it must appear as an outrage to real science to allow the promulgation of such nefarious theories. What would sensible people say to-day, if a child had lice and we gave the powdered lice and the dandruff, etc., internally as a remedy for the lice? That is exactly Hahnemann's method in the itch!

There is but one way out of the difficulty—we must feel and show our contempt for homœopathy. It is a humbug from beginning to end and will die a natural death. The more we advance in our science—and indeed we are making giant strides—the higher the education of the population, the longer the term for the study of medicine and the severer and the more impartial the State Board examination of candidates for the right to practise, the quicker homœopathy and all other dogmatic -pathies will die.

Name one eminent mind in the medical fraternity, whose name is known all over the world, who has ever become a homœopath. And of all the homœopaths who have become known in the small circle of their immediate neighborhood or in their own homœopathic boundaries, name me one who has achieved something greater than Dr. Hering, who used to be looked upon by his confrères as their most illustrious representative, and whose main achievement was the discovery of the magnetic influence that shows itself in practising the following procedure:

Some infinitesimal dose, say the millionth part of a drop of the tincture of aconite dissolved in a glass of water will have the best effect if the glass be held in the *left* hand while we have full moon and the diluted stuff be then slowly sipped!

It is ridiculous, horrible, to think of it. No wonder that they have nothing to say in their conventions except about laws that may insure to them a longer life and do away with the necessity of study. Take any body of learned men and bring before them a physician and a homœopath. Let the latter tell all that he knows of the pathogenesis, the pathology, the symptoms and course, and the treatment and prophylaxis of tuberculosis, provided it be stipulated that he cannot draw upon the knowledge gained and discovered by the true medical profession *after* Hahnemann's death, and then give the physician the same opportunity! What would be the judgment of such a jury?

HUGO ENGEL.

NEWS ITEMS.

The American Dermatological Association will hold its fifteenth annual meeting at Washington, D. C., September 22, 23, 24 and 25, 1891.

The following papers will be read:

FIRST DAY.—SEPTEMBER 22D.

Dermatitis Hæmostatica, by Dr. H. G. Klotz.

A Case of Lupus Erythematosus with Fatal Complications, by Dr. W. A. Hardaway.

Report of a Case of Universal Erythema Multiforme, with colored portrait and specimen, by Dr. L. A. Duhring.

An Unusual Case of Sarcoma involving the Skin of the Arm; Amputation; Recovery, by Dr. F. J. Shepherd.

Multiple Sarcomata: History of a Case Showing Modification and Amelioration of Symptoms with Large Doses of Arsenic, by Dr. S. Sherwell.

SECOND DAY.—SEPTEMBER 23D.

Discussion on Tuberculosis of the Skin:

Its Clinical Aspects and Relations, by Dr. J. C. White.

Its Pathology, by Dr. J. T. Bowen.

Its Treatment, by Dr. G. H. Fox.

Thirteen Cases of Tuberculosis of the Skin, with their Treatment, by Dr. J. S. Howe.

A Case of Lichen Scrofulosorum, by Dr. J. Grindon.

Notes of a Visit to the Leper Hospital at San Remo, Italy, with Photographs, by Dr. L. A. Duhring.

THIRD DAY.—SEPTEMBER 24TH.

The Treatment of Alopecia Areata, by Dr. P. A. Morrow.

A Therapeutic Note on Alopecia Areata, by Dr. L. D. Bulkley.

Morphœa Atrophica of Wilson, by Dr. R. W. Taylor.

The Treatment of Pruritus, by Dr. E. B. Bronson.

Prairie Itch, by Dr. L. N. Denslow.

Diseases of the Skin Associated with Derangements of the Nervous System, by Dr. W. T. Corlett.

Treatment of Chronic Ringworm in an Institution for Boys, by Dr. L. A. Duhring.

FOURTH DAY.—SEPTEMBER 25TH.

Notes of a Case of Acute Dermatitis Exfoliativa, by Dr. J. E. Graham.

Note Relative to Pemphigus Vegetans, by Dr. J. N. Hyde.

A Study of Mycosis Fungoides, with Report of a Case, by Drs. H. W. Stelwagon and H. Leffingwell Hatch.

Lymphangioma Circumscriptum, with Report of a Case, by Dr. M. B. Hartzell.

Remarks on Carbuncle, with Report of a Peculiar Case, by Dr. H. G. Klotz.

Note on Erythema et Nævus Nuchæ, by Dr. C. W. Allen.

A Case of Lichen Ruber, by Dr. J. Grindon.

The Personal Equation in Dermatology, by Dr. L. D. Bulkley.

The American Orthopedic Association will hold its fifth annual meeting at Washington, D. C., September 22, 23, 24 and 25, 1891.

The following programme is announced:

FIRST DAY.—SEPTEMBER 22D.

The President's Address, by Dr. A. B. Judson, of New York.

The Orthopedic Work of the Late Mr. Thomas, by Dr. A. J. Steele, of St. Louis.

Uniform Nomenclature in Orthopedic Surgery, by Dr. W. R. Townsend, of New York.

Two Cases of a Peculiar Type of Primary Crural Asymmetry, by Dr. Henry Ling Taylor, of New York.

On the Best Means of Preventing a Loose Joint, or Dangling Limb, after Resection at the Shoulder-joint, with an Illustrative Case, by Dr. W. R. Whitehead, of Denver.

A Case of Spina Bifida with Partial Motor and Sensory Paralysis, Double Equino-varus and Purulent Bursitis, by Dr. H. Augustus Wilson, of Philadelphia.

Congenital Club-foot, with Absence of Great Toe and Contiguous Bones of the Instep, by Dr. T. M. L. Chrystie, of New York.

A Case of Club-foot, Club-hand and Multiple Joint-deformity, by Dr. William E. Wirt, of Cleveland.

On the Use of the Wrench in the Treatment of Club-foot, by Mr. Robert Jones, of Liverpool.

Operation upon the Concave Surface in Talipes Equino-varus, by Dr. B. E. McKenzie, of Toronto.

The After-treatment of Excision of the Knee-joint, by Dr. John C. Schapps, of Brooklyn.

Gonorrheal Rheumatism and its Treatment—Primary and Secondary, by Mr. B. E. Brodhurst, of London.

Atrophy in Joint Disease, by Dr. E. G. Brackett, of Boston.

The Diagnostic and Prognostic Value of High Temperature in Chronic Joint Disease, by Dr. Robert W. Lovett, of Boston.

On the Tests for Recovery from Joint Disease, by Mr. Robert Jones, of Liverpool.

Apparatus for Making Traction, by Dr. William E. Wirt, of Cleveland.

Some Lateral-traction Fixation Hip-splints, by Dr. A. M. Phelps, of New York.

SECOND DAY.—SEPTEMBER 23D.

Rhachitis in Adolescence, by Dr. Bernard Bartow, of Buffalo.

The Aspirator in Orthopedic Practice, by Dr. Ap Morgan Vance, of Louisville.

Congenital Misplacement of the Hip, with New Apparatus for its Treatment, by Dr. A. M. Phelps, of New York.

A Study of Atrophies, by Dr. Roswell Park, of Buffalo.

The Diagnosis of Pott's Disease, by Dr. Robert W. Lovett, of Boston.

The Differential Diagnosis in Pott's Disease, by Dr. Geo. W. Ryan, of Cincinnati.

Syphilitic Pott's Disease in Children, by Dr. John Ridlon, of New York.

Pott's Disease and Pregnancy, by Dr. T. Halsted Myers, of New York.

Paraplegia in Pott's Disease, by Dr. E. G. Brackett, of Boston.

Pressure-myelitis in Pott's Disease, by Dr. Albert Hoffa, of Würzberg.

Abscesses in Pott's Disease, by Dr. Herbert L. Burrell, of Boston.

Abscesses in Pott's Disease, by Dr. W. R. Townsend, of New York.

The Evacuation of Spinal Abscesses without Drainage, by Mr. George Arthur Wright, of Manchester.

Bilateral Lumbar Abscess, with a Case, by Dr. James K. Young, of Philadelphia.

The Benign Course of Abscesses in Pott's Disease under Efficient Mechanical Treatment, by Dr. Newton M. Shaffer, of New York.

The Value of Mechanical Treatment in Old and Neglected Cases of Pott's Disease, by Dr. Henry Ling Taylor, of New York.

The Mechanical Treatment of Pott's Disease, with an Exhibition of Apparatus, by Dr. A. M. Phelps, of New York.

THIRD DAY.—SEPTEMBER 24TH.

Malignant Disease of the Vertebræ Simulating Pott's Disease, by Dr. A. B. Judson, of New York.

Paralysis in Pott's Disease, by Dr. Charles L. Scudder, of Boston.

Prognosis in Pott's Disease, by Dr. Samuel Ketch, of New York.

Proposed Treatment of Pott's Disease by Wiring the Vertebral Processes, by Dr. B. E. Hadra, of Galveston.

The Operative Treatment in Spinal Caries, by Dr. De Forrest Willard, of Philadelphia.

The Treatment of Pott's Disease, with especial reference to the Early Stage, by Dr. Bernard Bartow, of Buffalo.

Pott's Disease in Adults, by Dr. A. J. Steele, of St. Louis.

Pott's Disease in Middle and Advanced Life, by Mr. Howard Marsh, of London.

Cervical Spondylitis, by Dr. L. A. Weigel, of Rochester.

The Prevention of Unnecessary Deformity in Pott's Disease, by Dr. Royal Whitman, of New York.

A Brief History of the Use of Suspension in Pott's Disease, by Dr. Benjamin Lee, of Philadelphia.

Recumbency in Pott's Disease, by Dr. Ap Morgan Vance, of Louisville.

Extension in Pott's Disease, by Dr. B. E. McKenzie, of Toronto.

Extension in Bed, by Dr. Charles C. Foster, of Cambridge.

Traction and Fixation in Pott's Disease, by Dr. Reginald H. Sayre, of New York.

The Treatment of Pott's Disease, by Dr. V. P. Gibney, of New York.

Comparative Value of the Present Modes of Treatment of Caries of the Spine, by Dr. E. H. Bradford, of Boston.

FOURTH DAY.—SEPTEMBER 25TH.

A Further Contribution to Typhoid Spine, by Dr. V. P. Gibney, of New York.

The Treatment of Congenital Dislocations of the Hip, by Dr. E. H. Bradford, of Boston.

On Elongation of the Ligamentum Patellæ as a Factor in the Production of Certain Knee Troubles and Difficulties in Locomotion, by Dr. Newton M. Shaffer, of New York.

Observations on Torticollis, with particular reference to the Significance of the So-called Hæmatoma of the Sterno-mastoid Muscle, by Dr. Royal Whitman, of New York.

Ten Cases of Excision of the Knee-joint for Disease, and their Lessons, by Dr. Joseph D. Bryant, of New York.

Rheumatic Spondylitis, by Dr. Geo. W. Ryan, of Cincinnati.

The Definition and the Scope of Orthopedic Surgery, by Dr. V. P. Gibney, of New York.

The Relations of Lateral Curvature of the Spine and Flat-foot, by Dr. Paul Redard, of Paris.

Pathological Anatomy of Lateral Curvature of the Spine, by Dr. F. Beely, of Berlin.

Means of Recording Rotation in Lateral Curvature, by Dr. E. H. Bradford, of Boston.

A Contribution to the Etiology of Lateral Spinal Curvature, by Dr. Charles L. Scudder, of Boston.

Modifications in the Treatment of Lateral Curvature, by Dr. E. H. Bradford, of Boston.

Spastic and Infantile Paralyses, by Dr. De Forrest Willard, of Philadelphia.

The Operative Treatment of Spastic Paralysis, by Dr. L. A. Weigel, of Rochester.

The Operative Treatment of Spastic Paralysis, by Dr. Charles L. Scudder, of Boston.

Additional Notes on Sacro-iliac Disease, by Dr. Benjamin Lee, of Philadelphia.

Wilhelm Weber, the physicist and biologist, of Göttingen, is dead.

Dr. J. P. Crozer Griffith has been elected Clinical Professor of the Diseases of Children in the University of Pennsylvania.

Dr. G. Frank Lydston has been elected Professor of Genito-urinary and Venereal Diseases in the Chicago College of Physicians and Surgeons.

The German Anatomical Society will hold its congress of next year at Vienna. The local committee consists of Toldt, Zuckerkandl and v. Ebner.

Rush Hospital.—The announcement is made that the dispensary service of the Rush Hospital for the treatment of consumption and allied diseases is now open. The clinics are held daily (Sundays excepted) at 2 P.M., at the northeast corner of Twenty-second and Pine Streets.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 14 TO JULY 20, 1891.

PAGE, CHARLES, *Colonel and Surgeon.*—Heretofore assigned to duty in the Division of the Atlantic, will report to the commanding general Department of the East, for assignment to duty as Medical Director, and CHARLES T. ALEXANDER, *Lieutenant-Colonel and Surgeon*, will report for assignment to duty as Attending Sugeon, New York City, N. Y.

MCCLELLAN, ELY, *Major and Surgeon.*—Heretofore assigned to duty in the Division of the Missouri, will report to the commanding general Department of the Missouri, for assignment to duty as Attending Surgeon, Headquarters Department of the Missouri, and Examiner of Recruits at Chicago, Ill.

BROWN, PAUL R., *Assistant Surgeon.*—Leave of absence extended one month.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

MOTOR DISTURBANCES OF THE STOMACH.[1]

BY CHARLES G. STOCKTON, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE AND OF CLINICAL MEDICINE, MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO; PHYSICIAN TO THE BUFFALO GENERAL HOSPITAL.

THE object of this note is to re-state the importance of the systematic study of gastric disorders. The symptoms produced by the various indigestions naturally arrange themselves into those of unnatural sensations, abnormal secretions, and irregular movements. Of these last, those that are dependent upon functional rather than upon structural fault are here considered.

Possibly too little attention is given to the question of the gastric movements in the process of digestion. Our efforts are more often put forth for the correction of faulty secretion, but good thus accomplished is often produced by effects upon the motor functions of the organ. For instance, in infancy, children frequently regurgitate milk soon after nursing, and this to such an extent that the child suffers from inanition. It is noticed that the milk returned is curdled and acid in reaction; the fault is attributed to an acid stomach, and alkalies are given, with consequent relief. Now, probably in such cases the stomach is not too acid, but rather the cardiac orifice relaxes, and when the normal peristalsis of the stomach occurs regurgitation of the food takes place. The effect of the antacid, lessening the stimulation to the gastric walls, is followed by a weaker peristalsis; the cardiac opening does not relax under the weakened pressure, and the trouble abates. A similar condition of affairs takes place in adult life, and many persons suffering from what they call sour stomach will, upon careful investigation, be found not victims of true pyrosis, but rather of weakness of the cardiac orifice which permits too easy regurgitation of the stomach-contents. It is to be understood that when the movements of the stomach are properly balanced, there may be sufficient stimulus from fermentation, or other abnormal conditions of the gastric contents, to produce unnaturally strong peristalsis, and hence regurgitation. In such cases, the food returned will be very irritating, probably very acid, and will be accompanied by other symptoms than those of motor disturbance.

[1] Read before the Medical Association of Central New York, June, 1891.

In other cases it will be found that the gastric contents are excessively acid in reaction, and so irritating as to produce gastric catarrh, and yet regurgitation does not take place. In other words, the cardiac orifice once closed remains securely locked, and fails to open to any degree of pressure or stimulation from below. Hence patients may suffer from sour stomach and not know it; and, on the other hand, paradoxical as it may seem, may be actually free from pyrosis while yet complaining of acid eructations. I have reported one case in which a young woman was reduced to the verge of starvation from the continued return of food, and this without any other apparent disturbance of digestion; without nausea, without vomiting—quite after the manner of the ruminant.

Your attention is invited now to similar perversions in the behavior of the pyloric orifice. All of us are familiar with lienteric diarrhea, and frequently have had patients complaining that immediately after eating they were hurried from the table by an urgent desire to evacuate the bowels. On inspection of such alvine discharges, the food is found to be but little changed, and, as a result of this, nutrition fails, as is evidenced by the loss of flesh and the accompanying nervous phenomena. Efforts to correct this by ordinary remedies for diarrhea are attended with poor success, but remedies directed toward calming the peristalsis and strengthening the pylorus, if administered immediately before meals, will result in removing the difficulty. The cause of this diarrhea is doubtless a weakened pylorus. It usually occurs in neurotic individuals the digestion of whom is without fault, except in this simple irregularity of the gastric movements. In these cases, there must also exist a similar disorder in the intestinal movements, which is fortunate, for the reason that it points out the seat of trouble. I have seen several cases in which the stomach was completely emptied of a hearty meal within an hour after its ingestion. This food cannot be sufficiently prepared for entrance into the intestine; its presence there must create intestinal disorders, and, in fact, is a common cause of duodenal indigestion and intestinal catarrh.

On the other hand, the pylorus refuses to relax at that proper period of digestion and of time appointed by Nature. Such a condition is illustrated by a case that I now have under observation. This young man has a good appetite, eats heartily, suffers no

distress for several hours after his meal; then he feels a sense of weight and fulness in the epigastrium, general nervousness, and sometimes gastric pain preventing sleep and business pursuits; these symptoms are entirely relieved by emptying the stomach by means of a tube. If this procedure is carried out not too long after eating, the meal is found to be properly digested, apparently ready for passage onward; if too long after a meal, an excess of fluid is found. Before treatment, this disturbance had led to a somewhat acute dilatation, and, indeed, on several occasions three quarts of fluid were removed from his stomach at once, after which he was perfectly comfortable, and ready for another meal. Not only was there abnormal tightness of the pylorus, but doubtless of the cardia likewise, for through his thin abdominal wall the violent gastric movements could be plainly observed in slow, strong undulations; the stomach evidently vainly struggling to empty itself. The bowels were constipated, the skin dry, the urine scant, not albuminous (save a faint trace by picric acid), but containing hyaline and granular casts in large number. Treatment directed to the nervous system, to lessening the arterial tension, and to stimulating the skin, with very little local treatment of the stomach, quickly relieved his symptoms. The stomach resumed its natural size, defecation became regular and natural, the urine became normal, and, according to my own scales, he gained fourteen pounds in ten days. I have no doubt that this condition to some extent explains the cases of marked dilatation of the stomach not depending upon stenosis in the ordinary sense of that term.

This seems a proper time to speak of the want of gastric peristalsis which so often results in retarded digestion, and occasionally gastrectasia. In the majority of cases of gastric dilatation coming under my observation there has been great atony of the walls with almost complete absence of movement. In advanced cases the tight closure of the orifices is not seen, gas is passed freely upward, and I have no doubt the fluid contents would pass easily downward but for the fact that the stomach is dilated into a great sac, lying so far below the pylorus that, without gastric movements, complete emptying of the organ is not naturally effected. Time does not permit of the consideration of vomiting, spasm of the stomach, and irregular peristalsis, which might properly be treated under this head. I have only time to speak briefly of the management of these cases. The measures employed in their treatment consist in careful diet, regulation of the gastric stimulation, the application of electricity by means of the gastric electrode[1] in the manner hitherto described, and abdominal massage.[1] Satisfactory results have been obtained by these means, and greater attention to them, I feel certain, would not be misdirected.

[1] Medical Record, November 9, 1889.

A FEW THOUGHTS ON THE TECHNIQUE OF HYSTERECTOMY.[2]

BY JOSEPH EASTMAN, M.D.,

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THE frequent occurrence of pathological conditions demanding the removal of the uterus would seem to make "the technique of hysterectomy" of special interest at the present time. Since the publication of my paper in the *Indiana Medical Journal*, and its translation into German ("Memorabilien," *Zeitschrift für rationelle praktische Aerzte*, July, 1890), I have received letters from several distinguished members of the profession seeking more definite information in regard to my method of hysterectomy. This has induced me to present these few thoughts and report additional illustrative cases.

First, let us consider the operation by abdominal section for fibroma. The important question is as to the treatment of the pedicle. Treat it extraperitoneally? Yes. But shall that be in an abdominal or in a vaginal wound? In conversation with Dr. Bantock in his office in London, I learned that this distinguished advocate of fastening the pedicle in the lower angle of the wound had, like myself, found cases of multinodular fibroma in which the new-growths filled the pelvis, disorganizing broad ligaments and the uterine cervix to such an extent that no pedicle could be formed. He deals with these cases by enucleation, packing with gauze and draining through the abdominal wound, after having fastened the serous covering of the pelvis to the serous lining of the abdominal wall. There can be no cut-and-dried method applicable to every case. Each is a law unto itself. In the following three cases, as well as in those reported in the previous paper, no pedicle whatever could be formed which could be brought up and fixed in the lower angle of the wound. For this reason one of the cases had been rejected by a good operator. The suggestion to enucleate the fibrous nodules and then make a pedicle could not have been carried out in these cases, as the elastic ligature would have cut off the top of the vagina, or would not have been low enough to include healthy tissue be-

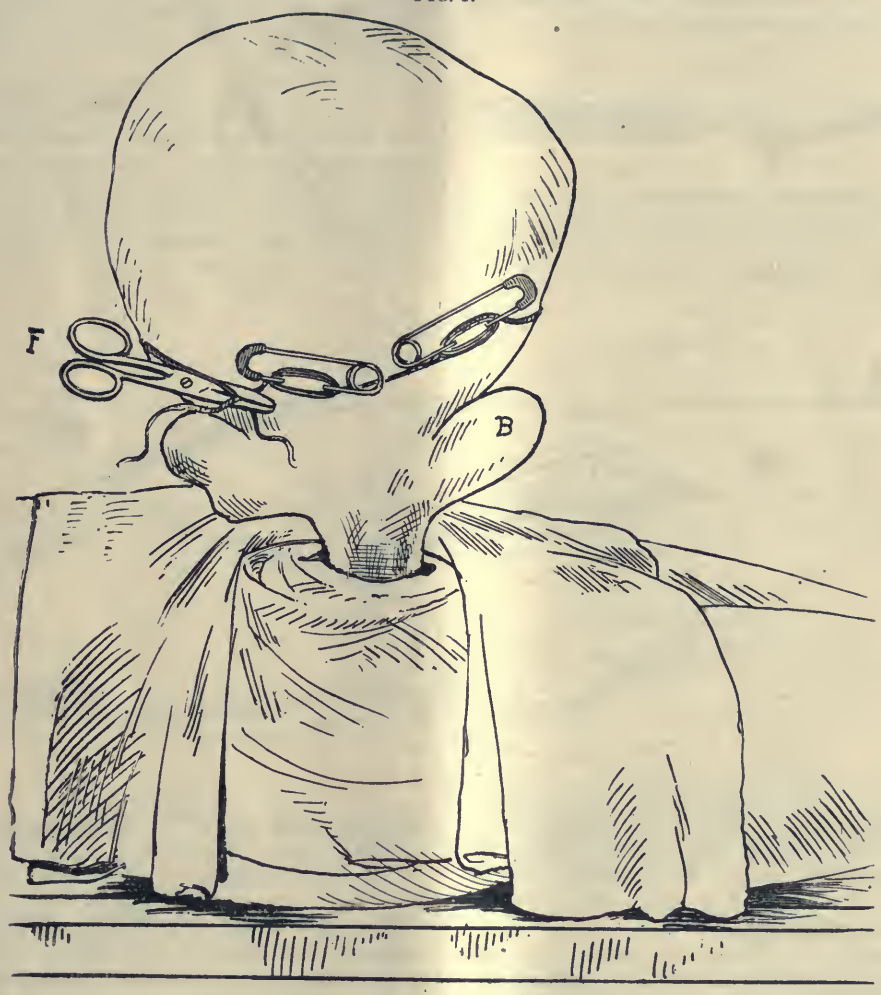
[1] The American Journal of the Medical Sciences, July, 1890.

[2] Based on an experience of 245 abdominal sections, 53 of which were hysterectomies. Read before the Gynecological Section of the American Medical Association, Washington, D.C., May 6, 1891.

low the cavities from which the fibrous nodules had been enucleated. To leave pockets without drainage would be bad surgery.

Case I.—Mrs. H., forty-five years old, was the mother of three children. She was referred to me by Dr. Evans, of Greencastle. Following an attack of la grippe, her health began to decline. When I saw her, four months later, the symptoms pointed to the existence of an abdominal tumor that filled the pelvis, extending up into the abdomen as high as the umbilicus. Celiotomy was performed May 8, 1890. The tumor was lifted forward, out of the abdomen. There were nodular masses, as large as the fist, well down in both broad ligaments, and one nodular mass, as large as a hen's egg, between the bladder and uterus. These nodular masses prevented my raising the tumor out of the pelvis. With an elastic ligature of rubber-tubing, kept from slipping up or down by pins at various places on the surface of the tumor, I encircled the tumor below the point where it was deemed best to sever it. (See Fig. 1.) The surface of the tumor was wrapped with the Esmarch bandage to diminish its circulation. Having been careful to apply the elastic ligature, the bulk of the tumor above the ligatures was then cut away so as to leave sufficient peritoneum to cover the enormous wound. I then opened the capsule of the tumor. Applying the forceps to arrest hemorrhage, I enucleated the nodular masses from beneath the ligature, which, contracting as I removed each mass, unpuckered the outer layers (mostly composed of hypertrophied uterine fibre) like a purse-string. My staff (Fig. 2) was then passed into the vagina to a position behind the cervix uteri and below the elastic ligature. Then, cutting upon the groove of the staff, I began ligating and cutting; as the staff had located the cervix I was enabled to extirpate it without interference with the ureters. A considerable portion of the anterior wall of the body of the uterus was left, as it was in such close contact with the bladder that its removal was deemed inadvisable. As the ovaries and tubes were much diseased, I tied them off. The ligatures, twenty-five in number, were left eight inches in length, and twisted

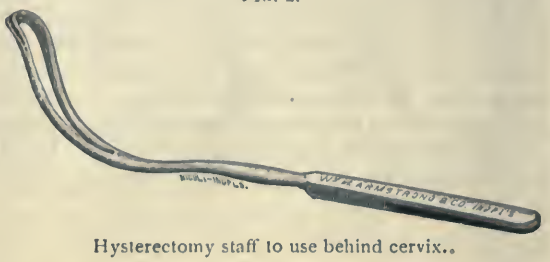
Fig. 1.



B, bladder. *F*, safety-pinning elastic ligature.

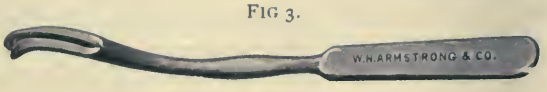
into one cord. A pair of forceps was then passed into the vagina, the ligatures grasped and drawn out of the vulva. A glass drainage-tube was then

FIG. 2.



Hysterectomy staff to use behind cervix..

FIG 3.



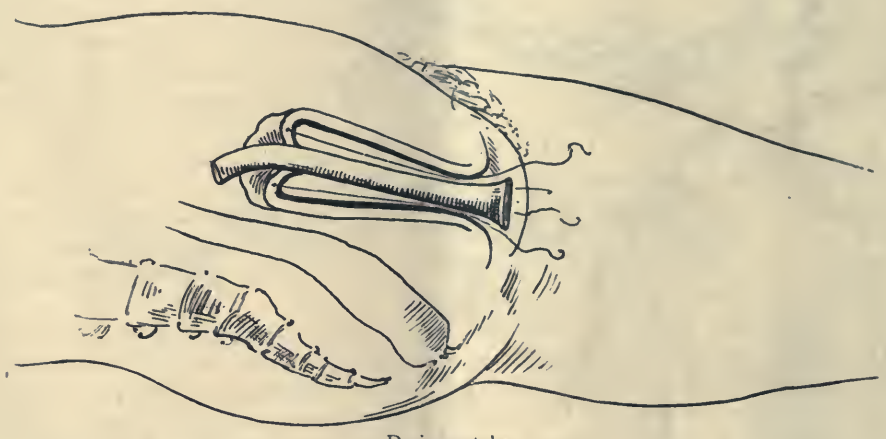
Staff to use at side of cervix.

passed per vaginam into the wound, and for three days frequently washed out to secure a perfect outflow of blood and serum. By traction on the long ligatures, which turned the raw edges into the vagina, the serous margins of the pelvic wound were brought together as closely as possible. The abdominal wound was closed at once. Recovery was complete and satisfactory.

CASE II.—Mrs. I., thirty-five years old, was referred to me by Dr. H. Jameson, of Indianapolis. When first examined she gave the following history: There had been loss of weight and strength for the past two years. She had had no marked hemorrhages. Physical examination revealed the pelvis completely filled by a hard, fibrous tumor so situated that the cervix uteri was with difficulty found, being high up behind the os pubis, and well to the right side. The tumor also occupied the abdominal cavity as high as the umbilicus. I used electricity for some three months, employing as strong constant currents as the patient could bear. The patient became disgusted with the treatment. Celiotomy was performed May 20, 1890. The abdomen having been opened, the tumor was encircled as in Case I. I then opened the capsule of the tumor, and enucleated from the posterior uterine wall a mass as large as an ordinary human head. Several bleeding-points in the capsule were caught with forceps. My staff was then passed into the vagina, held closely behind the cervix and cut upon. As the staff was withdrawn, I inserted my finger into the opening; then by ligating and cutting, the remaining portion of the uterus and capsule of the tumor were removed. The peritoneal margins of the wound were brought together; the ligatures, having been left long, were drawn out of the vulva and a glass drainage-tube inserted. The abdominal wound was closed. The patient made a good recovery.

CASE III.—Mrs. S., forty years old, was referred to me by Dr. Hodges, of Indianapolis. Examination revealed a large, multinodular mass filling the entire abdominal cavity, while one large subserous nodule extended high into the left hypochondriac region, displacing the spleen and left lung upward. Celiotomy was performed June 19, 1890. The abdomen was opened and the tumor brought forward and lifted out. I then proceeded as in the previous cases. The patient made an entirely satisfactory recovery, the highest temperature having been 100°, the highest pulse-rate 95.

FIG. 4.



Drainage-tube.

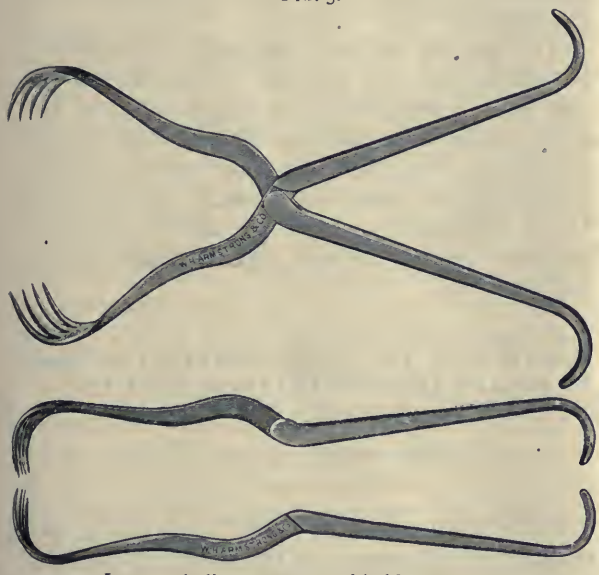
CASE IV.—Mrs. P., forty-nine years old, had suffered from uterine hemorrhage for thirteen years. I first saw her with Dr. G. W. Kemper, of Muncie, Ind., when I found and removed a sloughing fibroid mass that would have filled a quart bowl. The uterus seemed to contract, but could be distinctly felt between the umbilicus and the pubes. The hemorrhages did not return for six months; during this time she enjoyed good health. Soon after the return of the hemorrhages, another mass, as large as a goose-egg, was forced into the vagina and removed by Dr. Leavens, of Middletown, then her medical attendant. On my return from Europe, in October, I learned that the hemorrhages had not ceased, whereupon I removed the uterus as in the three previous cases. The mass removed was as

large as my doubled fists. The inner surface of the uterus was covered with bleeding, fungous growths; that, in the absence of a discharge of fibrous fragments and blood for thirteen years, would be strong clinical evidence of malignant degeneration. The patient made a good recovery. The second specimen[1] was removed by my method, with the recovery of the patient. Dr. Lovett, of Goodland, Ind., was her medical attendant.

In the last two cases, a pedicle could have been formed to fasten in the abdominal wound. Still, the women, in my opinion, were less mutilated and the abdominal wall being free, are in a more nearly normal condition, while I am sure that the period of convalescence was two weeks shorter than it would otherwise have been.

One of the greatest dangers to be avoided consists in the contamination of the peritoneum from the uterine cavity, especially when the latter is much enlarged and contains fluid. I use a large cautery

Fig. 5.



Large vulsella to extract and hold tumor steady.

to cut the surface of the stump and plunge the cautery freely down into the vagina. Another source of difficulty is constituted by the retraction and obliteration of the vaginal portion of the cervix, when the tumor is lifted out of the abdomen. I have, in two cases, been unable with my finger to find the cervix in the vagina. By passing the sound down the cervical canal I located the cervix to one side, where from other evidence it was least expected. I am still encouraged in my belief that, when the teaching shall have become obsolete that these tumors are comparatively free from danger and give little or no trouble after the menopause, we shall deal with the small tumors by removal of the uterine appendages, and with the larger ones by extirpation, and have as low a rate of mortality as we now have in removing ovarian tumors.

We cannot hope to reach this much-desired Mecca in our surgical pilgrimage if we stick to some buck-ram rule in operating and ignore the fact that the *peculiarities of tumor and pedicle* should determine our method of procedure.

Fortunate is he who can comprehend the anatomical and pathological bearings in a given case, and can *use good judgment* at every step of the operation *and in each and every emergency*.

Fig. 6.

Hook-needle.

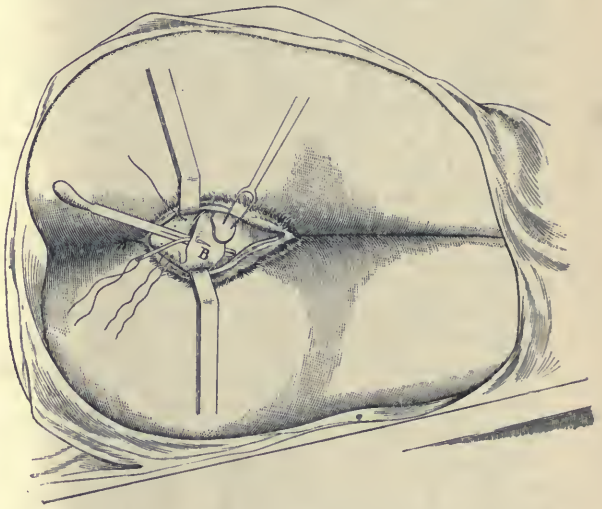
Vaginal Extirpation.—In my last twenty vaginal extirpations I have operated with the patient on the

Fig. 7.

Sound with grove on concave side.

side, using the position and speculum of the immortal Sims. I draw the uterus down very little.

Fig. 8.



I sometimes use ligatures alone, sometimes forceps, being governed by the circumstances in a given case. When ligatures are used, I first separate the uterus from the bladder and then open Douglas's pouch.

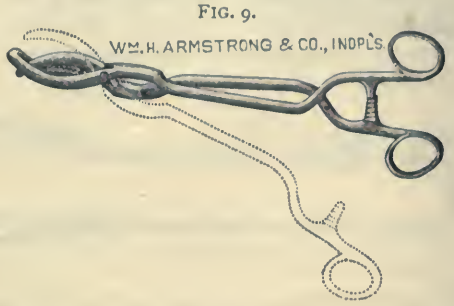
The hook-needle (Fig. 6), with the ligature, is then passed around the broad ligaments and the

[1] Specimens not shown, though present, as the discussion was cut off for want of time.

ligatures are tied. By the aid of this grooved sound (Fig. 7), the now constricted broad ligaments can be easily fixed and cut, three or four ligatures on each side being sufficient to secure the vessels. (See Fig. 8.) The ends of the ligatures are left long that they may assist in the drainage of each and every part of constricted tissue.

One advantage of the ligature is that an ovary or tube may be easily brought down and removed, no forceps obstructing the way.

FIG. 9.



Forceps.

When forceps (Fig. 9) are used, I proceed as follows: The uterus having been separated from the bladder, and Douglas's cul-de-sac having been opened, a strong ligature is passed around the ligaments by means of the "hook-needle" (cautiously avoiding the intestines); this ligature being tied, the ligaments are constricted to a round mass. The operator than passes the index finger of one hand behind the uterus, when the assistant easily slides these forceps, guided by the operator's fingers, around the ligaments and locks them. The same procedure is repeated on the opposite side and the ligaments severed, leaving the forceps to be tied together, side by side, as one forceps. The advantages claimed, are: (1) that by narrowing the ligaments their stumps are brought down into the vagina, so that the peritoneal cavity can be closed above the forceps; (2) the stumps of the broad ligaments are not left within the peritoneal cavity to discharge septic material as soon as the forceps are removed—a result that must always follow in any case in which the pressure of the forceps does not narrow the ligaments before compressing them; (3) only two forceps are used; (4) when the patient is weak, the operation can be quickly done; (5) the screw can be taken from the forceps and the blades applied separately and locked afterward, with no danger of hemorrhage, when they have been left forty-eight hours.

Whether ligatures or forceps are used the *stump must be treated extra-peritoneally*. The serous margins of the wound must be brought nicely together between the two pedicles. The utmost care in cleansing the pelvis and adjusting the parts is as necessary here as after abdominal section. A small drainage-tube may be used if necessary. It is astonishing to me that the results have been as good as they have, when putrid fragments from the pinch of many forceps have been left to contaminate the peritoneal surface of the pelvis and intestines. When the technique shall have been perfected, the mortality will be lowered and the field for the operation surely widened. We had better occasionally remove a uterus not yet cancerous, when the organ is rendering the patient an invalid, than wait until the perimetrium is involved. Again, there are many women with complete prolapsus, wearing supports and working for the support of themselves and families; women with retroverted uteri, complicated with prolapsed and adherent ovaries; women with hystero-neuroses, approaching a lingering menopause, with a history of insanity in their families—morphine-poisoned, nerve-wrecked, brain-shattered, reason-dethroned, asylum-homed—to whom a vaginal extirpation of the uterus, without regard as to whether or not the uterus be cancerous, would come as a blessing.

The primary mortality attending hysterectomy for cancer can and must be lowered, to the end that women will accept the operation earlier and thereby obtain the best guarantee against return of the disease. The better secondary results obtained in removing the cancerous breast by the method of Dr. S. W. Gross must teach us that the question is not how quickly can the operation be done, but how perfectly.

REMARKS ON THE DISTURBANCES THAT MAY FOLLOW INSTRUMENTATION UPON THE MALE URETHRA AND BLADDER.

BY PAUL THORNDIKE, M.D.,
OF BOSTON.

FOR nearly one hundred years it has been a well-recognized fact that a certain degree of constitutional disturbance is apt to follow the introduction of an instrument into the male urethra. This disturbance, varying as it does in intensity, and manifesting itself by different sets of symptoms in different cases, has received a variety of different names, and has been the subject of much speculation and of a great deal of painstaking investigation. Under the names catheter chill, catheter fever, urethral fever, and urinary fever, various conditions have been described, various classifications of these conditions have been made, and various ideas as to the causation of the disturbance have been advanced. In this way there has naturally arisen considerable confusion as to what clinical condition is meant when one or the other of these various terms is employed.

It has seemed to the writer that this confusion was

largely a verbal one, and that the conclusions reached by various observers in reality agreed very well. It is the object of these notes merely to make a simple classification of the different conditions as they exist clinically, and to speak briefly of each one. Looking at the matter purely from its clinical aspect, we find that all cases can readily be grouped under a few headings.

I. *Cases of "Shock."*—We are all familiar with the condition that is commonly spoken of as "catheter chill." After instrumentation upon urethra or bladder, especially if it be the patient's first experience of the sort, he becomes faint, and may completely lose consciousness, or he is seized with one or more short rigors. This attack is accompanied by little or no fever, passes off in a few moments, and, as a rule, is followed by no bad result of any kind. The attack comes directly or very shortly after the passage of the instrument, is of short duration, and is followed by little, if any, constitutional distubance. The attack is also more likely to occur and to occur with greater violence the deeper into the urethra the instrument is passed.

Of this form of disturbance but little need be said. It is clearly a case of nervous shock occurring in a healthy person; that is to say, the rigor is a physiological one, occasioned by the local irritation of the instrument, and following more or less immediately upon its passage. The attack may take the form of a fainting-spell or of a chill, but it is not followed by any symptom or group of symptoms indicating septic infection. It is the simplest form of shock following mechanical irritation of the urethra or bladder.

There is, however, a severer form of shock that is fortunately much rarer. Mr. Banks, in an admirable article in the *Edinburgh Medical Journal* for 1871, reports several such cases, and, among others, the following, which will serve as a type of this class of cases:

"A man between forty and fifty years of age was admitted to the Liverpool Royal Infirmary for urethral obstruction. A false passage was found, but a catheter (6–7 English) was, without any undue violence, passed into the bladder. There was very little pain, no bleeding, and nothing to indicate any lesion of the urethra other than the preëxisting false passage. Almost immediately after the entrance of the catheter into the bladder, the patient was seized with a severe rigor. The instrument was cautiously withdrawn, but the patient became profoundly collapsed and died in a few moments. In this case no autopsy was allowed, but there are recorded many such cases in which the autopsy showed no lesion to account for the fatal issue. More or less advanced renal disease is, however, often found at the autopsy in these cases. This, then, is an example of the severest form of urethral shock."

In different cases there may be various other symptoms, *e. g.*, vomiting, diarrhea, retention or suppression of urine, associated with the collapse, but they are all cases of this type; that is, they are all sharp attacks coming on immediately or very shortly after instrumentation, and the fatal result occurs rarely later than forty-eight hours from the beginning of the attack. There may be little or no fever, and the attack begins so soon after its cause that there has been no time for any septic absorption to have taken place.

Again, in those cases in which there has been suppression of urine, death takes place so quickly that it cannot by any possibility be attributed to uremia following the suppression. These are cases of shock, pure and simple.

II. *Cases of Acute Fever.*—We come next to a class of cases having little or nothing to do with the class already spoken of, and yet concerning the nature of which the greatest differences of opinion exist. I mean the acute febrile cases—the commonest form of urinary fever, and the type of case that we see most frequently and often speak of as a case of "catheter fever."

That these cases may have certain symptoms in common with the class of cases already mentioned is certainly true, and it is apparently for this reason that some writers have called them cases of shock; others, cases due to uremia; while still others mention malaria as the causative element. A typical case of this class would be the following:

A patient in good general condition is examined for stricture, and a bougie or steel sound passed with little or no difficulty. After several hours, and generally shortly after the first urination following the passage of the instrument, the patient experiences a distinct chill. He looks ill, has an anxious expression, and begins to complain of pains in back and head. The temperature rises, and there may be vomiting and retention of urine. The temperature goes higher, and thirst becomes marked. This febrile attack lasts a few hours, and gives way to a period of sweating, after which the patient is left in an exhausted condition. As a rule the fever subsides within twenty-four hours, and on the next day he has well-nigh recovered his ordinary health. This usually ends the trouble, but the attack may be repeated once or oftener without fresh provocation of any sort. This recurrence, with no further instrumentation or other assignable cause, would, of course, suggest further trouble of a serious nature, but attacks of this sort may go on for some weeks, with many recurrences, and yet end in recovery. Sir Henry Thompson, in speaking of these recurrences, says: "And sometimes the reason for the

recurrence is not very obvious; thus, if no cystitis appears, or if a preëxisting slight attack is not intensified, suspicion may arise as to the presence of inflammation in the ureter or pelvis of the kidney of either side, to be sought for by examination for local tenderness, etc. And when there is no such affection, and no renal implication or other cause—septicemic infection for example—discoverable, the recurring attacks will probably soon diminish and disappear." Can such an acute febrile attack be caused by nervous shock? If so, the attack should follow immediately upon its cause, and should be the greater in proportion as its cause is the more severe and prolonged. This is not the case, for the fever does not occur until several hours after the instrumentation, and more commonly a short time (from one to four hours) after the first micturition following the use of the instrument. It is also quite apt to follow a simple, easily performed catheterization. Then, too, if due to shock, we should not expect any prophylactic after-treatment to prevent the attacks after urethral operations. Yet it would seem that nearly all the cases escape with no disturbance whatever, when, after internal urethrotomy, for example, steps are taken to prevent contact of urine with the wound. It is also well known to surgeons that these attacks are comparatively rare after an external perineal urethrotomy or lithotomy when proper bladder-drainage is secured. It is also found that the position of the wound in operations upon the urethra has a direct influence upon the appearance of these symptoms.

Mr. Reginald Harrison says: "We find such symptoms more frequently follow when the wound is made on the floor of the urethra in preference to the roof. A dependent position of the wound is more likely to be associated with the fever than one not so situated."

Mr. Harrison adopted the theory that these febrile attacks after urethral operations were due to poisonous material of some sort furnished by the urine, and absorbed through the wound made by the operation. He performed a number of operations with the idea of keeping the urethral wound entirely free from contact with urine, either fresh or decomposed. To accomplish this end he performed an internal urethrotomy on each one of a series of cases of anterior stricture, and then secured absolute and perfect drainage in each case by also performing an external perineal urethrotomy. In this way the urethral wounds were kept free from all contact with urine, and in no such case was there any sign of urinary fever, while in the internal urethrotomies that he had previously performed rigors and febrile symptoms were of common occurrence.

Other observers do not agree with Mr. Harrison on this point. Dr. F. S. Watson, of Boston, has recently performed a series of such operations, *i. e.*, combined internal and external (perineal) urethrotomy; and in two of the cases with perfect bladder-drainage and with every care given to surgical cleanliness there were attacks of urinary fever. Mr. Harrison, then, is a supporter of the absorption theory of the causation of this fever, and in his articles on the subject tries to answer the two main arguments that are brought forward against this view.

In the first place it is asked: "If this fever is septic, why do we not have it in very severe form in cases of urinary extravasation?" His reply to this is, that when urine is extravasated it acts as a local poison, killing the surrounding tissues, so that little if any absorption takes place.

Again it is asked: "If this fever is septic, how are the rapidly fatal cases to be explained—that is, the cases that die in from twenty-four to forty-eight hours, with no lesion of continuity in urethra or bladder discoverable at the autopsy?" To begin with, such a lesion may readily exist, and be an ample channel for absorption, and yet not be readily found at an autopsy; and beside this, the cases referred to are not cases of urethral or urinary fever at all, but are admirable examples of the severer form of shock already spoken of at some length.

Now comes the question: "If this fever is due to the absorption of certain poisonous products, what are these products? In a series of articles that appeared in the French medical journals between 1882–86, Dr. Bouchard reports the results of an interesting series of investigations in this direction. Bouchard found that in the healthy person there exist certain alkaloids that are formed in the intestinal tract as a result of the activity of putrefactive organisms; that these alkaloids are excreted in part by the kidneys, and so are to be found in normal urine; and that the diseases that augment the production of these intestinal alkaloids must also augment their presence in the urine. Then he found that urine injected subcutaneously produced certain effects upon rabbits, and that these effects varied accordingly as the person furnishing the urine was healthy or not. Next he proved that the symptoms produced were not due to any of the ordinary chemical constituents of the urine, and inferred that the alkaloids mentioned were therefore the causative agents. At all events, whether the poison absorbed consists of bacteria themselves or of the results of bacterial activity, these investigations are extremely valuable, if only as a suggestion of how much there remains for the medical chemistry of the future to make clear to us.

III. *Cases of Chronic Fever.*—We now reach a third class of disturbances following urethral instrumentation. These are the *chronic* febrile cases, which

form a very distinct class by themselves. In them the attack follows the passage of a catheter for the relief of a more or less distended and atonied bladder. An old stricture or a gradually progressive prostatic hypertrophy has caused a long-standing obstruction to urinary outflow; the result has been the retention in the bladder of a slowly but constantly increasing quantity of urine—so-called "residual urine"—and a consequent long-continued distention and slowly increasing atony of that organ. Such a case comes sooner or later to the surgeon for relief, the patient complaining that he cannot hold his water; that it is constantly dribbling away from him.

Inquiry reveals the fact that the trouble has existed and has been increasing for several years, and the catheter draws off a considerable quantity of residual urine. The patient is instructed as to his condition, and is regularly started on his catheter-life. In a few days he begins to feel poorly, has chilly feelings, but not necessarily a distinct rigor. He becomes feverish, but his fever is slight and has distinct intermissions. He loses his appetite, suffers considerably from thirst, and feels wretched at all times; his tongue becomes dry, and covered with a brown coating. Examination of the urine generally shows a cystitis more or less marked, even if this condition did not exist before the beginning of regular catheterism. This condition may persist for weeks, and yet, with proper care, the patient recover, or it may terminate fatally, in which case there will almost invariably be found advanced disease of ureters and kidneys.

If the obstruction has been of long duration before relief was sought, there is usually a more or less marked atony of the bladder-wall and a urine of very low specific gravity, the latter suggesting the probable existence of dilated ureters with hydro-nephrosis or pyo-nephrosis. These are the cases that terminate fatally. If, on the other hand, relief was sought early, the febrile disturbance will probably disappear gradually, and the patient may continue his catheter-life in comfort for years. Sir Henry Thompson says that when catheter treatment is begun so early that the quantity of residual urine in the bladder does not exceed ℥xii-xv, a favorable prognosis may generally be given. It has been asserted, notably by Sir Andrew Clark, in an article published in the London *Lancet* for December 22, 1883, that this form of fever may exist and prove fatal, with no such serious disease of the kidney discoverable at the autopsy. If this is true, it must occur rarely, since it is certain that in most of the cases such disease exists. He mentions two cases that died of this form of fever. In one there was no autopsy, and in the other the report is as follows: "The prostate was enlarged, the bladder was dilated and thickened —viewed from the inside it was trabecular and slightly saccular—the mucous lining congested and in part *eroded*, and everywhere coated with a grayish-white, stinking mucus. There was nothing to be detected in the ureters or kidneys, although they were carefully examined. With such a vesical condition as this, is it not possible that the fatal issue was due to a septicemia that had its starting-point in the bladder? What is the cause of such an outbreak of fever? Mr. Henry Morris explains it as follows. He says: "It is to the state of the kidney prior to surgical treatment, and not to the state of the bladder after the commencement of catheterism, that we ought to look for an explanation of this form of fever." In other words, this so-called "surgical kidney" is not necessarily the result of an extension upward of a septic inflammation from below, but the disease already existing in the kidney is the starting-point of the trouble that follows catheterization. He says that two conditions are essential to bring about the disturbance:

First. A preëxisting degeneration of the secreting substance of the kidney.

Second. An alteration in the intra-renal pressure as a result of obstruction, whereby the ureters, pelves and calices of the kidneys become dilated.

When under these conditions a catheter is passed, a state of active congestion is initiated in the kidneys by the release of this pressure. This increased blood-supply to the kidneys cannot be controlled by the natural elasticity of these organs and their capsules, because the preëxisting chronic changes in these organs have led to a firm adhesion of the overstretched capsules; and the elasticity of the renal substance has been destroyed by the intra-renal pressure of the long-pent-up urine; so that in the condition of active congestion the kidney-substance is between two firm pressures, and the result is an acute pyelo-nephritis, in addition to the chronic interstitial changes that already existed in the kidneys. So far as I am aware, no explanation has been offered for the fatal results that are said to occasionally take place without the existence of renal disease to account for them.

IV. *Cases of Direct Septic Infection.*—Before speaking of the treatment of these various forms of disturbance, it seems proper to mention the trouble that may arise as a result of direct septic infection following instrumentation upon urethra or bladder.

Of this but little need be said. As the result of the passage of an unclean instrument we may get a simple cystitis, accompanied by slight, if any, constitutional disturbance. This may, and generally does, clear up and disappear under proper treatment; or, the septic process may extend up the ureter and cause a pyelo-nephritis and death from the so-called surgical kidney.

Again, we may have absorption of the septic

material through a wound made by the instrument, and so a true septicemia may begin. This may prove slight and end in recovery, or may speedily prove fatal. Finally, as a result of purulent absorption we may have the rare complication of pyemia with pus-formation in joints, pleuræ, etc. This proves fatal in the majority of cases.

We have spoken of four classes of disturbance following instrumentation on the male bladder and urethra, and in these four classes can, I believe, be arranged all cases of disturbance of this sort. These were:

First: The cases of "urethral shock" brought about by the simple passage of an instrument in the urethra; very common, and, as a rule, of little importance, but occasionally terminating in speedy death. This fatal form is rare, and generally associated with renal disease of some sort.

Second: The cases of "acute urinary fever," probably caused by absorption of poisonous products from the urine; these acute attacks at times recur without any known cause, such as further instrumentation.

Third: The cases of "chronic urinary fever," coming on after catheterism in cases in which for a long time obstructive disease in some form had preexisted.

Fourth: Cases of "septic infection" from an unclean instrument. This may be merely a mild cystitis, may extend upward and cause septic trouble in the kidney, or may manifest itself as a true general septicemia or pyemia.

It is certainly unwise to use any one term—be it "catheter fever" or some other—to include these different sets of cases. The cases of nervous disturbance, the "shock" cases, differ in no respect from cases of nervous shock produced in other ways. The same may be said of the septic cases. This leaves us two sets of cases to which the term "urinary fever" may properly be applied: the acute cases, and the chronic cases occurring in patients with obstructive disease. To these two classes the terms "acute urinary fever" and "chronic urinary fever" may be properly applied.

Treatment.—Of the treatment of acute urinary fever there is little to say. Quinine, of which much has been written, is of no value in preventing the attacks. This, however, cannot be said of aconite; which in two-minim doses of Fleming's tincture, as recommended by Mr. Long, seems often to be of value as a prophylactic. Frequent, small doses of digitalis are of value in cases associated with suppression of urine. Dr. Keyes, in speaking of prophylaxis, says: "I do not know of any remedy that can in all cases avert chill, but I place more reliance upon a combination of pilocarpine and morphine than on anything else."

The importance of surgical cleanliness and proper drainage of urine in the treatment of urethral and bladder cases cannot be over-estimated. All instruments should be surgically clean, and in cases of urethral operations, when it is not deemed best entirely to prevent contact of urine with the wound, either by tying in a catheter or by doing a perineal section, the urethra should be cleansed by frequent careful irrigations.

That by proper care the development of chronic cases can always be prevented is, of course, not true, but it is true that the frequency of their occurrence can be controlled by careful attention to the details of catheterism.

Having decided to start our patient on his catheter-life, how are we to proceed? The patient should rest quietly indoors, upon a light diet (chiefly milk) for two or three days before the first catheterization, and for the first week or so of regular catheterism. The catheter should be passed regularly, as often as may be found necessary in the individual case, and with the instrument that is found best adapted to that case (generally a Condé instrument of moderate size). The bladder should never be completely emptied, and this is of greater importance the longer the obstruction to natural urination has existed and the greater the quantity of residual urine and atony of the bladder-wall that results. A good method to pursue is to slowly draw off a moderate quantity of urine, and then to replace this by a smaller quantity of some mild antiseptic solution, such as boric acid, permanganate of potash, or corrosive sublimate. In this way the bladder can, in the course of a few days, be carefully and gradually emptied without any sudden diminution in the pressure of the pent-up urine that has so long been present.

There should be no unnecessary manipulations in the early days of the catheterism, and irrigations of the bladder for the cure of a purulent cystitis should be deferred until the patient's bladder has become accustomed to its new condition. Finally, after he has become a little familiar with the procedure, the patient may be instructed to catheterize himself. If, in cases of this sort, some such plan were carefully carried out, we would have fewer and milder cases of chronic urinary fever.

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SOME SUGGESTIONS AS TO THE NATURE AND CAUSATION OF ECZEMA.

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It would be a well-nigh hopeless endeavor to attempt to say anything fresh about eczema, since one might about as well attempt originality in discussing the contents of Scarpa's triangle, or to add another zygapophysis to the dorsal vertebræ. Gallons of ink have been spread upon acres of paper in the description of its chamelion-like variations, and the discussion of its relation to age, sex, diet, clothing, and the stages of the moon, would fill volumes. The list of substances recommended in its treatment is almost co-extensive with the pharmacopœia; in fact, the drug that is not suspected of being useful in this connection is apparently yet to be discovered. The very voluminousness of its literature, however, is proof both of the interest of the subject and the delightful uncertainty that surrounds some of its important relations; it may even serve as an excuse for presenting the following brief suggestions:

Rating it by the frequency of its occurrence, eczema certainly is entitled to a considerable share of the literature of disease, for it has probably one of the widest known ranges, both racial, personal, and geographic, of all pathological processes, attacking old and young, rich and poor, vigorous and feeble, with an impartiality that is positively refreshing by comparison with the strong tendency displayed by most other diseases to hit a man only when he is down. Jamieson estimates that it makes up or enters into one-half of all skin affections, while such is its infinite variability that Bulkley has found no less than one hundred and fifty different Latin terms applied to describe its changing moods. A disease of marked individuality, and yet having no single symptom that is absolutely diagnostic, and no microscopic appearance that can be called characteristic, it occupies in nosology a unique position. It is not my purpose to discuss this interesting process as a whole, but merely to submit for discussion two conclusions in regard to its nature and causation, with reasons that seem to me to support them.

These are, first, that eczema is merely the simplest, most rudimentary form of chronic inflammation of which the cutaneous tissues are capable, their easiest mode of expressing resentment at outside interference, the "retort direct," or "you're another," of their never-ceasing dispute with their environment. In other words, that the uniformity of the disease-process in different subjects is due to the similarity in structure and reactions of the tissues wherein it occurs.

Second, that the variations of the process are due principally to the infinite variety of causes that may excite it, and that in the great majority of cases are influences external to the body. Of course, I am aware that part of these conclusions would be accepted by nearly all dermatologists, part vigorously disputed, and part generally rejected, and that there is little new or original about them except their form, so that, to save time, I shall dispense with the quotation of authorities, and proceed to submit the considerations that seem to justify them, leaving the reader to decide upon their validity. First, and most important of all, is the fact that the pathological changes of eczema, whether microscopic or clinical, are in no essential respect different from those of a simple inflammation (dermatitis), except in the time required for their production and the modifications incident upon their more gradual development. An eczema differs from a burn in the same way that the decay of a prostrate monarch of the forest in its native glade differs from the blazing and crackling of a log upon the hearth. It is the time-relations that differ, the processes and their products being otherwise identical. A sunburn or scald reaches at one bound the erythematous or vesicular condition for the attainment of which in an eczematous fashion the repeated application of less active irritants for days or weeks would be necessary—except, of course, that the more rapid process produces less stable results, and the sudden change of tension in the nerve fibrils gives us pain in the place of itching. The stages and forms of eczema depend principally upon the degree or length of persistence of the irritation. Should the irritant be a feeble one, or but recently applied, we find only a general hyperemia and swelling of the epidermal tissues, with a sensation of heat or slight itchiness—the erythematous stage or form. Let the irritation be a little more vigorous or prolonged, and minute disseminated foci of exudation spring up all over the rete mucosum, and the papular stage is developed; another turn of the screw and each papule becomes rapidly swollen with serum, and bulging in the direction of least resistance, pushes up the epidermis, and forms a vesicle (eczema vesiculosum) that possibly ruptures (eczema madidans). Let the pressure rise a little higher, or the resisting power of the tissues be diminished, and there ensues rapid death of the cellular elements in the vesicles, the

pustular form, with its resulting crusts. At any stage of the game, on the withdrawal of the exciting cause, the hyperemia may disappear, the papules may shrink up, the vesicles dry down into scales, or the pustules into crusts, and a new term is needed —"squamosa" or "sicca." On the other hand, should the disturbing influence persist so as to keep the skin in a state of continual ebullition, the whole thickness of the corium becomes involved and thickened, nutrition of the superficial layers is interfered with, cracks form, the epiderm becomes horny or discolored, and "eczema chronica" is in possession of the field.

The second basis of my conclusion is, that a genuine and characteristic eczema can be produced upon perfectly healthy skins solely by the application of external irritants—in fact, a large and influential body of authorities declare that all eczemas are so caused. A familiar instance is the eruption following the exposure to "poison ivy," an eczema of the eczemas, with every characteristic symptom in perfection. It is hardly necessary for me to refer to the whole classes of "intertrigos," occupation-eczemas and clothing-eczemas, as further illustrations. The third consideration of interest in this connection is the fact that eczema is not limited to the human skin, but that the epidermis of all the domestic animals and of some plants is capable of an identical or analogous reaction. It would, indeed, seem to be one of the common inheritances of all living surface tissue. Its earliest analogue is, probably, the exudation of gummy or resinous fluids upon the stems or leaves of certain plants and trees, for the healing of wounds as a protection against fungi, or for the entanglement of insect enemies, and, in this connection, I can hardly resist placing the remarkable pouring or flowing out of the protoplasm from the surface of an amœba, by which it surrounds and encloses foreign bodies, and, if available, digests them. If these analogies be admitted, they would give to eczema a rational standing-ground as a reversion to a mode of action that was normal and useful to our remote ancestors—a relation that I believe, in the near future, will be traced in most of our distinctive disease processes; it seems, in fact, almost safe to assume it already in gout, cancer, and tubercle. Higher up in the plant scale we find a disease (the details of which, together with other interesting information, have been most kindly furnished me by Professor Pammel, of the State Agricultural College) that I am almost tempted to claim as a vegetable eczema, in "apple scab," caused by a fungus, *fusicladium dendriticum*. The presence of this parasite upon the bark provokes an exudation of cellular material from the cambium layer ("papular stage") that goes on to the formation of a layer or patches of cork ("horny stage"), and thus the softer tissues are protected from its ravages. In potato scab we have another similar process. Another fungus, *ozonium aunieconum*, produces a knotty eruption on the roots of the cotton-plant.

In domestic animals the eczemas are quite common, although perhaps not so frequent as upon the bare skins of the genus humanum. "Mange" in dogs, "grease" in horses, and "foot-and-mouth-disease" in cattle, are among the most familiar forms of its occurrence. I am informed by my friend Dr. A. B. Morse, D.V.S., that the morbid process is practically identical with that in the human subject, except that the pustular stage is more commonly and readily developed (as of course is the case in the hair-covered portions of the human epidermis), and that the best modern authorities regard almost every form of it as due to some germ or parasite—in other words, to almost the only chronic irritant from which the animal skin is not protected. Partial exceptions to this rule are the vesicular eruptions that often constitute the first stage of "collar-galls," or "saddle-galls," in horses, and that appear on the ears of dogs when chained up during summer-time. These are friction eczemas, due in one case to the pressure of the harness, and in the other to the combined influence of flies and scratching.

The fourth consideration bearing upon the inflammatory nature of eczema is the number of other diseases in which it constitutes the bulk of the morbid process. Scabies is but an eczema produced by the presence of the acarus or the sulphur applied to kill it, plus the actual burrows of the insect and scratch-marks. Pediculosis or phthiriasis is constructed on the same plan, and the seborrheas are probably at bottom eczemas. I think we would be justified in declaring that the pathological changes in the great group of trichophytoses or ringworms are eczematous, as the term "eczema marginatum" so generally applied to tinea cruris implies. In fact, the easiest form of dermic revolt against the tyranny of any parasite would seem to be an eczema.

Another straw pointing in this direction is the marked extent to which eczema prevails during infancy and childhood, when the poor little pink epiderm is struggling to adjust itself to the trying change from the nicely warmed water-bath in which it has been floating, to the flannels, soaps and changes of temperature and moisture of an unfriendly world. The innumerable caravan of "red gums," "prickly heats," "teething rashes," "heat rashes," "lichen scrofulosorum," etc., are all of this nature, and Bulkley, in his paper before the Berlin International Congress, gives tables showing that nearly 20 per cent. of all cases of eczema occur during the first five years of life, which is probably decidedly under the actual mark, so many cases at

this age being too slight to be considered worth treating.

If eczema be simply a dermatitis we can readily understand its well-marked preference for flexor surfaces, and especially flexures, as not only is the skin in these situations thinner, more delicate, and hence more easily injured, but, from the formation of the parts, perspiration, dust and foreign matter are much more apt to accumulate there, to say nothing of the mutual heat, friction or pressure of the opposing surfaces.

The so-called internal or predisposing causes of eczema seem, so far as our knowledge of this somewhat mysterious subject goes, to fall into line with the hypothesis. I think they can nearly all be divided into two main classes—those diseases or diatheses that throw too much vicarious excretory work upon the skin, or fill its vast mesh of bloodvessels with blood loaded with irritating nitrogenous substances—such as rheumatism, lithemia, diabetes and disturbances of the metabolic functions generally; and those states or influences that depress the resisting power of the skin and all the tissues of the body—such as exhausting disease, chlorosis, lactation, over-work or over-confinement, thus rendering it more vulnerable to external attacks. The first class, and it is by far the larger, is apparently simple, a case of response to local irritation from within instead of from without, although the addition of the latter is probably necessary to provoke an actual outbreak. Roughly speaking, the second class would seem to obey the general law that all morbid action may be initiated either by increasing the external pressure of the environment, or by diminishing the internal resistance of the organism. Of course, this explanatory suggestion is very crude, and only applies to very few of the difficulties of this vast and misty field, but so far as it goes it seems not wholly irrelevant.

If the probability of my first general conclusion is admitted, that of my second, that the variations of the disease are due to the variations of the cause, is practically implied, for if the essential morbid process be a simple primitive inflammatory change, it will then be modified according to locality, intensity and duration, all of which are determined by the nature of the influence that produces and perpetuates it. The chief value of this principle is as a basis of classification, and it seems to me that if on these lines we can succeed, ever so loosely, in dividing the mighty hosts of eczema, the classification will at least have the merits of simplicity, clearness, naturalness and practical working value. The mere location of a given case carries with it its prognosis and indications for treatment. With your permission I will submit a rough outline of such a classification, with a few illustrative cases. By far the most important is:

Class 1. Eczemas produced by influences entirely external to the body: divided into (a) climatic; (b) chemical; (c) mechanical or "frictional;" and (d) mycotic or parasitic.

Class 2. Eczemas produced by bodily influences or properties acting from without; examples, "intertrigo," eczema of the anus, the groin, or the back of the ear.

Class 3. Eczemas produced by bodily influences acting from within: (a) locally, as gout or rheumatism; (b) generally, as lactation, or anemia.

It must be admitted that not even these rough divisions are based upon absolutely hard and fast lines. Not only will Class 1 contain nearly 80 per cent. of all cases, but its method of causation will in some degree be present in nearly all those falling in the other two classes—indeed, it is hardly possible to conceive of an eczema occurring without some external provoking cause, although there are many cases wherein it is so palpably merely the last straw, the feather's touch, that precipitates the explosion, that we are justified in ascribing them to the preëxisting and predisposing conditions of the tissues. On the other hand, there are cases to which the classification will hardly apply, since the most careful investigation will fail to discover any cause whatever for them. It is a significant fact, however, that idiopathic eczema is becoming an extinct species almost as rapidly as is functional disease of the nervous tissues.

I will now briefly present a few typical cases that will illustrate my general drift better than pages of explanation. As an example of the first division of Class 1, climatic eczema, we have:

Case I.—A gentleman of about forty-six years of age, who ten years previously had emigrated to Iowa from the North of England. Within a few months after his arrival he began to be annoyed by acute attacks of vesicular eczema, starting upon the lower eyelids and spreading to the cheeks, eyebrows, and even to the folds of the neck and jaw; it also occasionally appeared between the fingers and on the backs of the hands. These attacks nearly always appeared to follow some unusual exposure to sun or wind, and would last from three to six days, and from the itching, burning and swelling of the parts caused great discomfort. He was in perfect health, and had never suffered from any similar affection in England. No treatment seemed to have any appreciable effect except the use of tar-water, which, freely applied, promptly relieved the itching, and caused the eruption to subside in a few days, only, however, to reappear on the next exposure. After three years' residence here he returned to England for a short visit, when, to his great relief, the trouble left him at once, and did not reappear until after his return to Iowa. From

this time the affection seemed gradually to subside, and in two or three years almost ceased to trouble him, reappearing only in a mild form after any unusual exposure to sun or wind.

CASE II.—A healthy young girl, about eighteen years of age, complained of an eruption that appeared upon the backs of her hands and wrists whenever they were especially exposed to the sun or wind, as in boating or fishing. The eruption annoyed her greatly by the itching and burning that accompanied it, although lasting only a few hours after the cessation of the exposure. It consisted of a large number of scattered papules, elevated and of bright-red color, that gave the whole skin a distinctly roughened and shotty feeling to the touch.

CASE III.—A college student, about twenty years of age, called my attention to an irritable condition of the skin of his nose that had appeared, he stated, since he left his home in Florida three weeks before. On examination I discovered upon the sides of the nose and cheeks a small "butterfly patch," of minutely vesicular, elevated scaly eruption, which itched and burned slightly. On questioning him he recollected that he had been similarly troubled on visiting in the North on two previous occasions. He had never thought of a climatic origin. I simply advised a little care as to soap, washing, etc., and in the course of a few months the eruption ceased to annoy him, and has now almost entirely disappeared.

Cases of eczema due to chemical causes, or "poisonings" of various kinds, are so common and so well understood that the division needs no illustration. For the same reason, in this brief sketch, a single case under the third or mechanical division must suffice:

CASE IV.—A healthy young merchant, of about twenty-five years of age, replying to the usual question in an examination for life-insurance, said he had no "eruption on the skin," except a "spot" on his right leg. On inspection I found this to be a small, elevated, roughened patch of scaly eczema, about the size of a nickel, just over the shin-bone, about three inches below the knee. He said it had been there some months, and occasionally itched. I was quite at a loss to account for its singular position and shape until I found that it was exactly at the spot where the clasp of a somewhat elaborate hose-suspender rested upon the skin. There was no similar eruption upon any other part of the body, and the surrounding skin was perfectly healthy.

Under the mycotic division I have to report:

CASE V.—A boy, of about nineteen years of age, complained of "spots on his skin." The whole surface of his body was dotted over with round or oval patches of elevated scaly eruptions, of a yellowish color, varying from one-half inch to one inch in diameter. He stated that these had appeared about one month before upon his chest, and gradually spread. Only the covered parts of his skin were affected. There was little or no itching. His general health was excellent. The eruption rapidly and completely disappeared under the use of a 2 per cent. resorcin ointment.

CASE IV.—A young mechanic, of vigorous physique, came to be relieved of a severe "chafing and scalding in the crotch," as he termed it. An inspection disclosed a patch of eruption, roughened, elevated, scaly, and of a deep, almost coppery-red color, with well-defined margins, occupying the perineum and extending down the back of the scrotum and inside of the thighs. The condition had existed several weeks, and defied home treatment, the itching and burning now being extremely severe. Although half dreading to apply any stimulating application to such an intensely irritated surface, I gave him a 2 per cent. resorcin salve, with a simple dusting-powder of oleate of zinc and starch. The irritation subsided at once, and the eruption soon followed suit.

The mere mention of Class 2, the eczemas of the flexures, such as the anus, the groin, or back of the ears, is sufficient to call up a host of cases in one's own recollection, and the same is true of the first division of Class 3, the eczemas of gouty, rheumatic or diabetic subjects. I thus reach my last division, those eczemas due to the effect of general depression:

CASE VII.—H. C., a conductor, aged thirty-nine, as the result of a collision sustained a severe compound fracture of the bones of the left leg, with extensive lacerations. After a prolonged effort to save the limb, suppuration set in, and it became necessary to amputate above the knee. His general condition having become greatly depressed, the wound healed extremely slowly, a distinct anemic heart-murmur developed, puffing occurred under the eyes, and the stump became edematous and waxy-looking, easily pitting on pressure. Just as this depression was beginning to disappear a well-marked eczematous eruption appeared upon the upper and inner part of the swollen stump, well above the wound, and out of reach of the discharges. Under the use of zinc dusting-powders the itch was relieved, and the eruption scaled off and subsided, to reappear at intervals, each time in a milder form, until his general health was practically restored.

In another of my cases an eczema broke out upon the surface of an extensive scar consequent upon severe laceration and crushing of the parts, and ran a most obstinate course.

As an illustration of over-work as a contributory cause I may mention the case of a journalist now under my care, who assures me that loss of sleep or over-strain of any sort always promptly aggravates an eczema from which at intervals he has suffered slightly for some years past.

Dr. George Dock, formerly of Philadelphia, and for three years Professor of Pathology in the Texas Medical College, at Galveston, has been elected Professor of the Practice of Medicine in the University of Michigan, at Ann Arbor.

CLINICAL MEMORANDA.

SHORT NOTES ON RECENT SURGICAL CASES.[1]

By ROBERT W. JOHNSON, M.D.,
of Baltimore, Md.

I wish to present the following cases, selected from my case-book of the past year:

NEPHROTOMY.

Case I.—M. J., thirty-one years of age, white male, married, the father of six children, when seventeen years of age had gonorrhea without complications. Six years ago he had intermitting pain in the left side. He also had attacks of gnawing pain in the left renal region lasting from thirty-six hours to a week, accompanied by fever and slight chill. The pain extended into the left testicle, which swelled and was hot; his urine was high-colored. Two months ago he passed blood with his urine but had no pain at the time. Nausea accompanied the pain; the bowels were regular; there was no cough.

On April 14, 1890, the urine was muddy-looking, frothy and the specific gravity was 1025; the usual urinary odor was faint. It was slightly acid in reaction; boiling did not affect the transparency; the nitric acid test showed a superabundance of urates. Microscopically I found disintegrating and enlarged blood corpuscles, pus, and a soapy reaction with liquor potassæ; no crystals were apparent. There were marked pain and tenderness over the left loin and extending along the course of the ureter to the testicle. My diagnosis was pus in the pelvis of the left kidney, possibly due to an impacted calculus. Dr. Tiffany saw the patient with me. Finding fluctuation and swelling deep in the left groin, he concurred in the diagnosis and in the proposed treatment by operation.

On April 18th, the patient had for four days been suffering with pain, lassitude, and rise of temperature in the evening. With full aseptic precautions I cut through the left groin, one-fourth of an inch below and parallel to the last rib (previously counted), making an incision four inches long and two and a half inches from the spine. Dividing some fibres of the erector spinæ, and with my fingers separating the peri-renal fat, I came down on the sac of the abscess, which was the expanded pelvis of the kidney; I ruptured it with my finger, giving exit to about a quart and a half of thin pus. I washed out the cavity with 1 : 8000 bichloride solution followed by hot water. I found no calculus, the calices seeming soft and the kidney apparently not disorganized or containing any hard point. I sounded the ureter with a probe, but no impacted calculus was to be found. After introducing a large rubber drainage-tube I stuffed the abscess cavity with iodoform gauze. The external wound up to the drain opening was sewed with silk. The patient suffered from shock, but whiskey, hypodermatically, brought him up. The patient made an uninterrupted recovery, his temperature rising once to 101°, from blocking of the drain, which caused a recurrence of the old pain. At present he is able to attend to his work, walking three or four miles a day, and has general good health, although much annoyed by the urinary fistula that remains. The ureter is impervious on that side. He cannot tolerate the gathering of the urine, and after having tried numerous other devices he finds an absorbent cotton pad the most convenient receptacle. He knows that extirpation of the kidney is the only means of relief from this condition; but knowing his surroundings, with a family dependent upon him, I have advised him not to risk it. Fortunately for him no one would imagine he had a urinary fistula, as he is very neat and his urine is not ammoniacal. The local treatment consists in washing out the abscess cavity alternately with bichloride solution, carbolic acid, and permanganate of potash, so that the large surface may not absorb any one drug to his detriment. The capacity of the cavity is now about two ounces. I injected Armenian bole to see if I could find any in the urine from his bladder, but apparently there is no communication between the left kidney and his bladder. His testicles swell occasionally and he has mutterings of pain in his right side, but nothing to warrant the inference that his other ureter is involved.

LITHOTOMY.

Case II.—A. N., thirteen years of age, white, came to America from Bohemia in 1890. He was employed as a tailor and led a sedentary life. He was admitted to St. Joseph's Hospital. He had a collateral tuberculous history on the part of his brother and sister. While on shipboard he had frequent micturition, pain and some blood in his urine. His urine was alkaline, with a specific gravity of 1010 and with pus and blood present. No stone was found, but apparent urethral incrustation near the neck of the bladder. The pain increased until it was almost unbearable, and in spite of sedative and antiseptic injections, including boracic acid, peroxide of hydrogen, a marked degree of cystitis remained, the pain being somewhat relieved by the retention of a soft catheter in the bladder. Further examination of the urinary deposit revealed no tubercle bacilli. The pain continuing, he was examined under chloroform. A stone, encysted or adherent to the right anterior wall of the bladder, was detected, and two days later, after cleansing the bladder with boracic acid solution, with Smith's small-sized lithotomy instrument, I did a left lateral lithotomy. There was but little hemorrhage, easily checked by a plug of iodoform gauze that was removed on the same evening. A stone was removed weighing 201 grains, about the size of a walnut, with phosphatic covering and presenting a corrugated indentation where it had been attached to the bladder. The child expressed great relief at once. His temperature kept about normal until the end of the second week, when the urine ceasing to flow through the wound, but now coming *per urethram*, there was a temporary rise to 102° with some tenderness over the bladder and a re-appearance of cystic urine. Benzoic acid with biborate of soda reduced the temperature at once, with the subsidence of the bladder irritation, and his progress to recovery was not marked by any relapse.

I would call attention to three points in connection with this case: First, the fact that so large a stone was not diagnosticated at the first examination. This I attributed to the fact that it was securely held by its attachment to the anterior wall of the bladder, a rather

[1] Read before the Clinical Society of Maryland, May 15, 1891.

unusual location for stone in children. Again, the phosphatic roughness of the urethra presented an apparent cause for his pain, frequent micturition, etc. Second, the great value of the Smith's lithotomy instrument, which renders the operation so mechanical that it is difficult to go astray in its use. I know this has been urged as an objection to it, and it has been said that anyone can do lithotomy with it, without skill or *tactus eruditus*. The obstetric forceps is mechanical, the plaster splint is mechanical, the ligature is mechanical—the very name of surgery is suggestive of handicraft, and one should welcome any simple mechanism that renders our science as much service as the instrument indicated. The last point about this case is the way in which it illustrates the value of benzoic acid and biborate of soda:

℞.—Acid. benzoic. . . . . gr. xxx.
Sod. biborat. . . . . ʒss.
Aquæ . . . . . ʒiij.
M. et ft. sol. S.—ʒij t. d. in water.

I did not use this combination until after the operation, when the child's temperature went up as the wound-drainage ceased. It acts as a specific, and men who have had much larger experience in these cases than myself tell me that the only objection to its use is that after taking it the patient seems to forget he has a stone and does not return, or declines the operation.

The next case to which I ask your attention is interesting rather from the peculiarity of the injury than from its treatment.

UNUSUAL COMPRESSION.

CASE III.—J. N., aged thirty, an Irish laborer, six feet tall and well proportioned, was caught under a gradually descending weight of ten tons and was compressed against an iron floor three minutes, he states, in a space not over twelve inches deep. The weight descended against his left arm, forcing it in flexed position against his side. He was unconscious when relieved. Blood flowed from his nose, mouth and ears. When seen by me there was great congestion of the face; the eyes were dark-purple from effused blood in the conjunctivæ (the black eye of a prize-fighter); the pupils were normal and there was no paralysis of the tongue. There was great mental hebetude, but the man could be roused. The pulse was slow. Petechial spots of extravasation appeared on the shoulder and purpuric spots in the skin. There was no fracture of the ribs. He was treated by active catharsis with calomel and salts, and cold applications to the head. In eight days he was able to walk about the ward, falteringly at first, but gradually recovered entirely, though when discharged his eyes reminded me of the rear end of the caboose in a night freight-train, as they looked like two red lanterns set in his head. The point of interest is the fact that there was no apparent internal hemorrhage in any of the more vascular organs, but that the compression forced the blood into the skin and through the fragile vessels of the nose, conjunctivæ and ear, rather than into apoplectic foci in the lungs or brain. The latter was no doubt congested, as was indicated by his early mental hebetude and slow pulse.

The two cases I now report are good examples of the satisfactory result of healing under the blood-clot, a method dwelt on by Schede in 1886 and practically illustrated in the masterly results obtained by Prof. Halsted and reported in the Johns Hopkins Hospital Report on Surgery.

COMPOUND FRACTURE OF THE FEMUR.

CASE IV.—J. C., aged fifty-five years, fell eighteen feet, cutting the face and bruising the body, with impacted fracture of the left wrist, simple fracture of the tip of the radius and right wrist, compound fracture of the lower third of the right femur, with an external wound two inches in length. When I saw the case the temporary dressing of bichloride gauze, with which, if possible, all my wounds are temporarily dressed before the patient is forwarded to the hospital, was removed. The external wound was washed with a weak solution of bichloride, and after washing with soap and shaving, catgut stitches brought the margins of the wound together. Iodoform-gauze dressing was applied with pressure by lino bandage, and the leg placed in a long side-splint and pasteboard internal splint with twelve-pound extension. No drainage was provided for. Healing followed *per primam* except at the seat of a small suture-abscess. A plaster splint was substituted in two weeks. The result was satisfactory. There was no infection at the seat of the compound fracture. Contrasting the temperature charts of this case and of another of simple fracture of the femur brought in at about the same time showed that there was greater variation from the normal in the simple than in the compound fracture. In both the variation was very slight.

BURN BY MOLTEN IRON.

CASE V.—E. C., aged thirty years, a colored laborer, accidentally put his left foot and ankle into molten iron as it poured from a furnace, at the same time burning his right foot slightly. He was admitted to the hospital March 6, 1891, with the whole integument of the left foot and ankle, except a small island of skin over the instep, in a charred condition. As it was impossible at the time to say how much of the foot could be saved, it was enveloped in cotton batting and carron oil, and when suppuration began was washed twice a day with permanganate of potash solution. April 6th, one month after his admission, it was apparent that the whole foot could not be saved, as some of the toes were gangrenous and the tendons of the extensors were necrotic; there were still also small sloughs adherent to the foot. At this date the whole surface of the foot, sole and all the ankle, except the islet of skin and the necrotic toes, was granulating and suppurating extensively. I determined to perform an amputation mentioned by Agnew and if possible (though I hardly hoped for success) have the incision unite by first intention. Soaking his foot in 1:10,000 bichloride solution in a foot-tub for twenty minutes before operating and taking aseptic precautions about instruments, dressing, etc., I made a transverse incision over the instep along the edge of the island of skin, disarticulated three cuneiform and the cuboid bones, using Esmarch's bandage and making the plantar flap from the granulation-covered sole. Silk ligatures were used, some difficulty being encountered in securing the plantar arteries. The wound was not washed with any aseptic solution. Boiled water was used in cleansing the sites of the bleeding-points. No drainage was introduced, but the flaps, with their granulating and

edematous edges, were united loosely with silk ligatures. The wound filling with blood from the oozing, gutta-percha protective was applied, then iodoform gauze, then sterilized cotton and lino bandages tightly so as to get pressure that was graduated by the bulk of the cotton, and as there was marked shock the patient was stimulated. I determined not to change the dressing unless there was some constitutional evidence of trouble, as indicated by temperature or pulse. As it was, his pulse was quieter after the first two days than it had been previously to the operation; and except on the evening of the operation, when his temperature rose to 102° (a rise I attributed to reaction after the shock) it did not go over 100°, the greater part of the time remaining at 99°. The discharge from the granulating surface outside the wound, and some no doubt from the blood-clot itself, soon moistened the dressing and it became so offensive that in spite of my previous resolve not to tamper with it unless there was constitutional evidence of infection I removed it on the ninth day. I found evidences of pus over the granulating surfaces of the burn, which had become beautifully less under the non-irritating protective, and the wound apparently closed from end to end along the line of incision; nor could I detect any fluctuation in the wound indicating pus—in fact, so far it presented the same appearance, as far as union was concerned, as if there had been no infecting surfaces in the immediate neighborhood. I trickled bichloride solution 1 : 2000 over the superficial ulceration, reapplied protective, which acts so satisfactorily in preventing the rude annihilation of capillaries by the removal of the adherent dressing, reapplied gauze and sterilized cotton fortified by several turns of plaster-of-Paris bandage. The man continued to do well, complaining of no pain worth mentioning, his pulse and temperature remaining about normal. His appetite was good, he slept well, etc. On the twenty-first day from curiosity I removed the dressing. The incision was firmly united, with no trace of suppuration in the wound. The silk suture showed beneath the granulating surface, which is markedly decreasing, with the same glazed appearance, due to the protective, as was seen at the time of the last dressing. The wound is now well, though the granulating surfaces will continue to heal for some time; the general condition in every respect is good.

I am not able to say exactly what the meaning of this primary union in the presence of pus-infiltrated granulations is. The soaking of the foot in bichloride solution at best sterilized only superficially the outside of the ulceration. It is certain that the incision must have been infected with pus-organisms in large numbers, as I handled the foot and leg and flaps indifferently. The sutures and ligatures were aseptic, yet nothing but boiled water was used to wash the incision; still, in spite of this, the blood-clot (?), purposely left without drainage, had the antiseptic quality of preventing suppuration in the wound, and that too while the external incisions at least were contaminated by the pus in the granulations. The line of incision is not visible except for the sutures purposely left for inspection.

Whether this immunity from suppuration is to be attributed to the phagocytic action of the blood-corpuscles as is taught by the Russian experimenter, or whether it is due to the antiseptic quality of the blood-serum, a later suggestion, I am not able to state—one case neither makes nor mars a theory. It is reported with the hope that it will evoke further light from others who may have secured primary union in amputation through suppurating surfaces, or wish to testify to its infrequent occurrence.

ULCERATIVE ENDOCARDITIS; AUTOPSY; REMARKS.[1]

By FRANK R. ENGLAND, M.D.,
PROFESSOR OF PEDIATRICS, BISHOP'S COLLEGE, MONTREAL.

Ulcerative endocarditis is an interesting and somewhat uncommon disease; some peculiar characters in the following case make it worthy of report.

The patient, J. I. R., thirty-six years of age, was by occupation a locomotive engineer. His father died at the age of seventy-one years, his mother at fifty-four years; one sister died suddenly of heart disease, one living brother has aortic disease, and two sisters are alive and well. The patient has enjoyed the best of health until about two and a half years ago, when he had an attack of articular rheumatism, complicated by endocarditis, which kept him in bed for four weeks. At this time there was present a soft, blowing, diastolic murmur which was transmitted down the sternum and upward along the vessels into the neck. His recovery was apparently good, the murmur nearly disappeared, and he again became, as he was before the attack, a florid, robust-looking man, the picture of health and weighing over two hundred pounds. For the past two summers, beginning about the first of July, he has been annoyed with what he called "hay-fever," characterized by a catarrhal condition of the eyes and nasal mucous membrane, accompanied by sneezing and running at the nose. These attacks had no ill effect on his general health and the symptoms would disappear after a few weeks. During the winter of 1890 he was troubled a great deal by a dry, harsh and irritating cough that resisted all treatment, but disappeared in the spring. In the same year, about Christmas-time, his same annoying cough returned. Nothing in the way of treatment afforded much benefit, and, as the cough continued, his health and strength began to suffer. He lost weight and complained of night-sweats. Examination of the lungs at this time detected no signs of disease and only an occasional dry rhonchus could be heard. About the end of January matters were made worse by domestic affliction, during which time he lost much rest and sleep. He lost courage, became disheartened and obstinate, refusing further treatment, and persisted in continuing at his work, until March 10th, when he broke down. I was sent for and found him greatly changed in appearance. He was thin and worn-looking, and complained, on the least motion (on drawing a full breath, on coughing or sneezing), of great weakness and severe pain over the left lumbar region, making it quite impossible for him to turn in bed. The temperature was 101°, the pulse quickened. During the first six days of his illness his temperature ranged between 100° and 101°. The cough was troublesome, but there was no expectoration and no sign of disease in the lungs could be made out. I remembered his old rheumatic trouble, but had no definite explanation for the

[1] Read before the Medico-chirurgical Society of Montreal, May 1, 1891.

continued though slight pyrexia, the great weakness and nervous prostration present. The latter was proved by his wakefulness, the muscular tremor and irritability, the profuse sweats, whenever he happened to fall asleep, together with the persistency and severity of the lumbar pain. I was therefore compelled to look upon the case as rheumatic and to direct my treatment accordingly. The heart was daily auscultated, and during the first ten days of illness no evidence of acute disease was made out. After this, however, a harsh, loud, double aortic murmur developed and there was soon marked incompetency of the aortic valves, indicated by visible pulsation of the arteries of the head and neck. The symptoms that marked the case throughout were great prostration, violent paroxysms of coughing and profuse perspiration on falling asleep. The expectoration, which became profuse as the disease advanced, was at times clear and tenacious, and at other times sanious. A congestive bronchitis developed. In spite of a fairly good appetite and of apparently good assimilation of food, the patient became anemic, weaker and more emaciated. Owing to the cough, he could get little sleep or rest at night. Throughout the disease the temperature varied from 99° to 101°, the respiration from 36 to 46, and the pulse from 96 to 120. At no time was pain in the cardiac region or palpitation complained of. There were no rigors. Rheumatic pain and tenderness developed in the right shoulder, lasting for a few days during the third week, and there was some vomiting a few days before death, which, due to heart-failure, occurred rather suddenly April 23d, forty-four days after the patient took to his bed.

At different times during his illness the patient was seen by my friend and confrère, Dr. Hutchinson; Drs. Armstrong, Rodger and Geo. Ross also saw the case in consultation with me, and from the severe constitutional symptoms and great prostration all considered the cardiac lesion to be of a grave and destructive nature. The possible diagnosis of ulcerative endocarditis was entertained early in the disease and Dr. Ross, who saw the patient ten days before death, was strongly inclined to consider the case as one of malignant endocarditis, though there had been no rigors, no septic temperature and though it did not occur in the course of pyemia, pneumonia, scarlatina, diphtheria or ague, diseases in which, according to Osler, it is met with most frequently. The autopsy showed vegetations one-eighth of an inch long on the flaps of the aortic valves. In one of the flaps there was a perforation through which a bristle could be passed. This damaged condition, as pointed out by Osler and others, is a frequent concomitant. A stained microscopic section showed micrococci in moderate quantity. The aperture in the flap was, at the time of examination, blocked with recent lymph. Such a condition demonstrates the possibility of an intermittent diastolic murmur.

The American Electro-therapeutic Association will hold its first annual meeting at the hall of the College of Physicians, Philadelphia, September 24, 25, and 26, 1891. Dr. G. Betton Massey, of Philadelphia, will preside. An invitation of attendance is extended to physicians interested in the discussion of electricity in medicine.

ARTIFICIAL DRUMS.[1]

BY LAURENCE TURNBULL, M.D., PH.G.,
OF PHILADELPHIA, PA.

THE following list shows the various kinds of artificial drum-heads that up to the present time have been introduced: Moistened cotton pellet, Mr. Yearsley; rubber disc (Toynbee) with silver wire; cotton ball attached to thread; disc of adhesive plaster; disc of sublimated gauze, Dr. L. Turnbull; disc of oiled silk, Dr. C. M. Thomas; cotton pellet fixed by collodion, Dr. Barr; disc of sized paper, Dr. C. J. Blake; compound disc of India-rubber, cotton-wool and flannel, Mr. George Field; solid piece of India-rubber, Dr. Burkard Merian; India-rubber tubes as long as the canal, Professor Politzer; India-rubber disc attached to the tube, Professor Lucas; circular patch of pellicle of egg, Dr. Walter Downie; disc of stout linen with cotton thread soaked in vaselin, Dr. F. M. Pierce; cylinder of gold, Dr. H. B. Richardson; glycerin thickened with tannin, Dr. Michael; plug of boric acid powder, Dr. Farquhar Mattheson. Katz advocates celluloid drums, consisting of a disc of this material with a roll of wick of cotton attached to the centre as a handle. Ward Cousins has suggested antiseptic lint artificial membranes compressed or shaped like a hat with a handle. Attention was called to these, the most recent I have tested, but not with the satisfaction I expected.

Gross frauds are being practised by the sale of *fraudulent artificial membranes* to persons so profoundly deaf as really to require only a hearing trumpet; indeed, there is not one deaf person in fifty or even a hundred who is found, by careful examination of the ears, to be suitable for an artificial membrane, and yet I find all classes of deaf individuals are found filling the offices of quacks who, without even a glance into the the ears of these deaf patients, bring forth a box containing two artificial drums of rubber, with a handle of rubber and silk thread, and with a pair of small forceps, a bottle containing a mixture of glycerin, alcohol and ether, and a small rubber syringe, as the cure-all.

I present one of the most recent of the advertised sets of drums, which was purchased in Philadelphia recently by a patient of mine, from an individual from the "Nutmeg State." My patient was not able even to hear the tick of a clock or watch, yet she was not examined, nor allowed even to test the artificial drums until after paying for them. After testing them most carefully for two weeks, the person who sold them having by that time left Philadelphia, she sent them to me to be placed among my collection. I have carefully and conscientiously tested all the varieties of these drums, and do not find anything better in suitable cases than antiseptic gauze, wool, absorbent cotton, oiled silk or fine rubber. These are charged with liquid vaselin, with menthol—20 per cent. solution—and placed properly in the ear. In most cases they act as protectors—rarely, however, improving the hearing.

THE ABUSE OF SYRINGING WITH VARIOUS FLUIDS.

In some of the most severe and protracted cases of acute middle-ear disease which have been under my

[1] Delivered before the Medical Society of the State of Pennsylvania, at its meeting in Reading, Pa., June 5, 1891.

care or sent to us, either in children of scrofulous or tuberculous parents, the constant syringing with fluids—with irritant mixtures, or even impure water—is a most pernicious habit, and should be frowned upon. If a liquid is required, nothing should be employed but a solution of the peroxide of hydrogen, both for the nose and ears—one part of peroxide to three of distilled water. The ears should afterward be carefully packed with absorbent cotton and finely levigated boric acid, with a small quantity of menthol rubbed into the powder.

POWDERS FOR TREATING THE EAR.

Since the discovery and introduction of that most valuable agent, boric acid, by Betzold, numerous agents have been lauded for a time as being superior to it, as, for instance, "resorcin," and several others of the tar or coal derivatives; but, although praised by several aurists of Italy and of this country, they were found to exercise a most irritating and injurious influence upon the ear. Iodoform has been brought forward, and in proper and specific cases it is excellent, and although not a true antiseptic, has retained its place. This was followed by "iodol," which had a short life. "Aristol" is a new agent, and I would like to state that there are many objections to such fanciful names, when its own proper name is at once simple and descriptive. This agent has been highly praised by medical men in Europe and in this country. It was termed a universal curative agent in almost every disease. In skin disease it was stated to be wonderful, and pronounced harmless. In chronic rhinitis and in gynecological practice it was most favorably reported; also in ophthalmology and other branches of medicine. In ear disease I, with others, have given it a fair trial, but it has not been found a suitable remedy in my hands. It is a dithymol-diodide, or, more simply, an iodide of thymol, and is most simple in its preparation; it is made by adding a solution of iodine in iodide of potassium to an alkaline solution of thymol. Aristol only contains 45–48 per cent. of iodine, which is less than half that of iodoform; and while it does not follow that the substance containing the most iodine will be the best antiseptic, or even possess such properties in any degree, I know what iodoform is, and I think it may be fairly stated that aristol is not nearly its equal.

RUPTURE OF A DUODENAL ULCER.

By C. A. HAMAN, M.D.,
RESIDENT PHYSICIAN OF THE CHILDREN'S HOSPITAL OF THE MARY J. DREXEL HOME.

The following case, on account of its rarity and the difficulty of diagnosis, is deemed worthy of being placed on record:

D. M., aged ten years, had stumbled and rolled down a hill in the park. Within one-half hour he was taken to the Children's Hospital of the Mary J. Drexel Home. On admission he was found to be slightly dazed; his temperature was 101.4° F.; his pulse 110, and of fair volume; the abdomen somewhat tympanitic and tender on pressure; there was a small lacerated wound of the chin. About four hours after admission he began to get pale, the pulse became imperceptible at the wrist, the tympany and tenderness increased, and the respirations were very frequent and shallow. Repeated vomiting set in; the vomiting was not stercoraceous or bloody. The patient died within three hours after the symptoms of collapse presented themselves.

At the autopsy there was found a ruptured ulcer of the duodenum, situated about ten inches from the pylorus. The peritoneal cavity was full of intestinal contents. No blood was present, and no other ulcers of the intestinal canal were found. The mesenteric glands were enlarged. No other pathological changes or evidences of injury were found in any of the viscera. Prior to the accident the boy had complained of no symptoms referable to disease of the gastro-intestinal tract.

For permission to publish this case I am indebted to Dr. Carl Frese, Chief Resident Physician of the German Hospital.

NOTES CONCERNING THE TREATMENT OF LEPROSY.

By W. THORNTON PARKER, M.D. (Munich), M.M.S.S.
of Salem, Mass.

In an article on "The Treatment of Leprosy," in the July number of the *American Journal of the Medical Sciences*, Dr. Mitra recommended the use of gurjun oil, both internally and locally. I beg to submit the following treatment:

℞.—Quininæ sulph.	. . . .	℥ss.
Tr. ferri chlor.	. . . .	fl℥ss.
Syr. simpl.	. . . .	fl℥ss.
Aquæ	. . . . qs. ad	fl℥vj.

S.—One fluidrachm three times daily, ten minutes before meals.

℞.—Syrup. trifolii comp.

S.—Two fluidrachms half an hour after meals.

Locally, the glycoboron cerate (boroglyceride, 25 per cent.) may be applied. This ointment will be found peculiarly valuable in the treatment of the ulcerative stages of both the tubercular and the anesthetic varieties. Combining powerful antiseptic properties with its healing and soothing action, it is especially indicated to prevent fetor. It is less irritating and in every way superior to creolin. This combination of tonic, alterative and local antiseptic treatment is most confidently recommended. I have used this mode of treatment with excellent results in a recent case of chronic eczema, in which the face, trunk and extremities were simply covered by the disease. Within a short time the irritation greatly subsided, and the normal color of the skin is rapidly returning. After two or three weeks of the iron and quinine tonic treatment, I employ the new but reliable preparation of iron known as the elixir succinate. The general indications in the case of lepers are cleanliness, antiseptic applications, alteratives and tonics. This plan of treatment will, I am sure, be found at least as efficacious as that advocated by Dr. Mitra.

CURRENT LITERATURE.

THE PATHOGENY OF MALIGNANT JAUNDICE.

Carreau remarks upon the analogy of the symptoms and lesions which exist in the grave jaundice of certain diseases engendered by very different causes, but which have, perhaps, as a final result an

identical chemical action upon the blood. Among these forms of jaundice, in addition to those which may be called essential, is that associated with poisoning by phosphorus, and those of yellow fever and the grave bilious fever, alongside of which may be classed that of the fever of the Creole children with black vomit. To these Carreau would add the grave jaundice of the fever with black urine (bilious hemoglobinuria), which, from its great resemblance to grave typhus, has received the name of "yellow paroxysms." Carreau thinks that this name should rather be reserved for the fever with black vomiting alluded to above. This fever is especially observed in Creole children under twelve years of age. On the third day albumin appears in the urine, and black vomit occurs, with a slight degree of jaundice, especially marked in the conjunctivæ, but at times scarcely apparent. This increases very much after death, which occurs on from the fifteenth to seventeenth day, after some ataxo-adynamic phenomena, with multiple hæmorrhages in the cellular tissue, especially of the digestive passages.

The diversity of the alterations in grave jaundice, as well as in yellow fever and phosphorus-poisoning, is the proof that the primordial lesion is a humoral alteration, and that the organs are affected secondarily, more or less, according to the degree of the gravity and the duration of the sickness. Thus, according to the rapidity with which death has occurred, various alterations will be found, from simple affection of the hepatic cells (the liver appears then scarcely altered to the sight) up to fatty degeneration and destruction of the cells in large number. The organ in this case appears to diminish one-half. Alteration in the kidneys progresses in proportion to the change in the liver, proving thus the existence of a general cause which acts upon these organs at the same time and in the same manner. But, whatever may be the duration of the sickness, there are some lesions which are always found to be the same. These are changes in the blood, and multiple hemorrhages which are the consequence of its alteration. Yellow fever, grave jaundice, phosphorus-poisoning, and the fever with black urine, all reveal a similar condition of the blood, with disseminated hemorrhages.

As to the pathogeny of grave jaundice, two factors are necessary—the blood and the bile—but experience has long since proven that the mixture of these two bodies is inoffensive. The symptomatic yellowness due to the biliary retention may last for weeks and months without altering sensibly the health, when, all at once, under some unknown influence, the phenomena of grave jaundice show themselves and carry off the patient in a few days. It is safe to say, with Trousseau, that one never knows how jaundice will end. As to what has brought the change, pathological anatomy, physiology and chemistry have sounded the problem in vain. Carreau has thought that neither the microscope, although it were extended to the utmost limits of vision, would comprehend the phenomena which occur within the organs, nor yet chemistry, which is still powerless to determine whether methemoglobin presents a degree of oxygenation less or superior to hemoglobin. He thinks, however, that a powerful method of research which is too much neglected, namely, the spectroscope, would reveal the phenomena in full formation. A mixture of fresh blood and bile presents the spectrum of hemoglobin and of the biliary pigments. If, now, this mixture be treated with ammonium sulphide, the spectrum of reduced hemoglobin is given at the same time that the obscurity of the biliary pigments persists. This is proof that the mixture of bile with blood, such as is observed in jaundice, is not noxious, but is reconcilable with relative health. Blood which is not fresh, but has been treated with the sulphide of ammonium, gives the spectrum of reduced hemoglobin at the same time that the band in the red disappears. This is the characteristic spectrum of acid methemoglobin. This same blood, with the addition of a small quantity of bile, submitted to the action of the reducer, still gives, with the disappearance of the band in the red, the spectrum of reduced hemoglobin, but with an interesting modification: the band of Stokes, in place of being uniform as usual, was scarcely shaded in its left three-fifths, and very pronounced, on the contrary, in its right two-fifths. With a larger quantity of bile a more remarkable result was obtained: the band of the methemoglobin always disappeared; in its place the band of reduced hemoglobin appeared, in the middle of which the first band of reduced hematin made its appearance. Agitation regenerated the oxyhemoglobin, which would replace at times the reduced hemoglobin, in the centre of which the reduced hematin would appear again.

Carreau concludes that since the bile exists in the blood permanently, the slightest cause tending to produce an irritation of the blood may give rise to the phenomena of grave jaundice. The blood has then undergone an alteration which has modified the hemoglobin and has converted it into acid methemoglobin. To avoid this grave accident he advises his patients afflicted with jaundice to avoid all fatigue and excesses and too sudden changes of temperature, and to wear flannel underclothing and woollen hose. Quinine is administered only in small doses, or if large doses are needed, they are given concurrently with the essence of ozonized turpentine to supply the oxygen which will be consumed in the conversion of a certain quantity of hemoglobin into methemoglobin by the action of the quinine.—*La Médecine Moderne*, No. 11, 1891.

A CASE OF WORD-BLINDNESS WITH AGRAPHIA.

DEJERINE, in a paper in *La Médecine Moderne*, No. 13, 1891, says that certain authors (Exner, Charcot) have admitted the existence of a special centre for the coördinated movements of writing, which centre is located in the posterior portion of the second frontal convolution of the left side. This localization is based upon the researches of Exner, but the facts upon which it rests are not absolutely demonstrative. The faculty of writing is directly subordinate to that of reading mentally. It consists only, according to the expression of

Wernicke, in the act of copying the optical images of the letters and words, and the movements of writing are in all points comparable to those which are necessary in copying any linear design whatever. But there is nothing to prove that the act of writing depends upon a special and autonomic centre which plays for writing the same *rôle* that the convolution of Broca does for the spoken language. To demonstrate the existence of an independent graphic motor centre it would be necessary to secure a clinical case of *pure, isolated agraphia*, followed by an autopsy, in which a minute anatomo-pathological examination would reveal as the only alteration a lesion of the presumed centre without concomitant lesion of the centres of tonal and optic memories or the convolution of Broca. But up to the present time no case of this kind has been reported; the rare autopsies of agraphia which have been published have all treated of complex clinical cases with extensive or multiple anatomo-pathological lesions.

The writer then reports a case of complete word-blindness with probable hemianopsia and agraphia. The patient was a gardener, sixty-three years of age, who at the age of fifty-six years had had a very slight attack of right hemiplegia, not accompanied by troubles of speech. In January, 1890, one morning he found that he could not read his paper, and on the 12th of February he was admitted to the ward of the hospital. At that time there was a scarcely appreciable paresis of the right arm and leg. The face was intact and also the general and special sensibilities. The patient showed no trace of word-deafness, but understood all that was said to him. He was unable to understand printing or writing. When presented a paper or written phrase, he would look at it for a moment and then say, "I do not understand it." He was also unable to name the letters (word- and letter-blindness). He was able, however, to read his name, and could recognize and name every object presented to him. There was some trouble with speech. The patient, either in the act of speaking spontaneously or while repeating some words, would take one word for another, so that at times it was difficult to understand him (paraphasia). He was unable to write anything except his own name, and held his pen as a child would who was learning to write for the first time. He was under treatment, with some improvement, until November 20th, when he died. The autopsy revealed a yellow plaque, localized on the lower three-fourths of the angular gyrus of the left side and terminating in a point in the external parieto-occipital fissure. The rest of the cortical surface was absolutely intact. The diseased mass penetrated in a conical shape into the subjacent white matter and divided the radiations of Gratiolet. In the right hemisphere were two spots of softening of the size of a small nut, one in the outer portion of the lenticular nucleus, the other in the anterior portion of the optic thalmus, by their union destroying the knee of the internal capsule.

Notwithstanding the clearness of the symptom of word-blindness, this case cannot be placed in the category of observations of word-blindness, pure and isolated, as reported by Charcot, Landolt, and others. In these cases the alexia was not accompanied by any trouble in writing; spontaneous writing, as well as writing from dictation, were performed easily. The patients wrote, but could not read. In the above case, however, the patient could not write at all. It is therefore a case of peculiar interest.

MEDICAL PROGRESS.

The Bacillus of Leprosy.—Kanthack and Barclay (*British Medical Journal*, June 6 and 13, 1891), members of the Leprosy Commission, report the results obtained by attempts to cultivate the bacillus of leprosy by introducing into culture-bouillon bits of leprous tissue taken from the ears of lepers. Cover-glass preparations of the bouillon revealed free bacilli identical morphologically and in their reaction to stains with the bacilli of leprosy. Inoculation of agar and gelatin-tubes resulted in the formation of a pellicle in which similar bacilli were found. Potato and egg-cultures were unsuccessful. The results of inoculation in animals were yet to be determined.

Rake and Buckmaster (*British Medical Journal*, June 27, 1891), also members of the Leprosy Commission, have succeeded in cultivating the bacillus of leprosy in serum from a blister. In two cases a blister was raised over a tubercle on the face of a leper and another blister over the normal skin of the back. A portion of the fluid from each blister was taken in a sterilized capillary tube, which was kept at the temperature of the body. Previous examination had shown that the fluid in a blister over a tubercle contained leprosy bacilli. On microscopic examination of stained preparations of the fluid placed in the tube, leprosy bacilli were found. Successful cultures were also made in bouillon, gelatin and agar.

The Detection of Oleomargarin.—Leffmann and Beam have devised a modification of the Reichert distillation process for butter, that possesses the advantages of completeness and of being rapidly carried out. Saponification is effected by means of a mixture prepared by adding twenty-five c.c. of a clear 50 per cent. solution of sodium hydroxide to 125 c.c. of pure re-distilled glycerol, and boiling from fifteen to twenty minutes, to evaporate the greater portion of the water.

About five grams of the clear fat are weighed out in a flask in the usual manner, ten c.c. of the alkali-glycerol added, and the flask heated over a Bunsen burner. The mixture may foam somewhat; this may be controlled and the operation hastened by shaking the flask. When all the water has been driven off, the liquid will cease to boil, and if the heat and agitation be continued a short time longer complete saponification will be effected, the mixture becoming perfectly clear. The whole operation, exclusive of weighing the fat, will require less than five minutes. The flask is then withdrawn from the heat, and the soap dissolved in ninety c.c. of water. The first portions of water should be added drop by drop, and the flask shaken between each addition, in order to avoid foaming. When the soap is dissolved, fifty c.c. of diluted sulphuric acid—twenty-five c.c. of the concentrated

acid to the liter—are added, a piece of pumice dropped in the flask and the distillation conducted as usual, until 100 c.c. of distillate are collected.

Blank experiments have given a distillate requiring from 0.2 to 0.3 of deci-normal alkali.

For the identification of "straight oleos" it has been found sufficient to carefully measure three c.c. of the clear, melted fat, using one-half the quantity of the reagents.

The alkali-glycerol is quite viscid when cold. It should be kept in a flask closed with a rubber stopper and heated when the measured portion is to be taken.

The Relation of Acetonuria to Digestive Derangement.—As a result of observations in eighty cases at Nothnagel's clinic, at Vienna, LORENZ (*Zeitschr. f. klin. Med.*, Hefte 1, 2, 1891) concludes that acetonuria is so constant in cases of digestive derangement of varied kinds as to be considered characteristic. A distinction between diaceturia and acetonuria cannot be made, because the variation in clinical symptoms is slight and quantitative, and in most severe cases a combination or alternation of the two conditions is the rule. The symptoms heretofore ascribed to the action of acetone or of diacetic acid are probably produced by the action of toxic substances the conversion of which into acetone has been checked by imperfect oxidation. Albuminuria, present in some cases, did not appear to be dependent upon the action of acetone or of diacetic acid. Acetone, in varying quantity, was found in the contents of the stomach and intestines. In cases of primary gastro-intestinal catarrh, acetone was almost invariably found in the contents of the stomach and intestines; in secondary catarrh, usually nervous in character, the presence of acetone was exceptional. In two cases, one of uræmic vomiting and one of hysteria with intestinal symptoms, in addition to acetone and diacetic acid, oxybutyric acid was also found in the urine.

Dermatol—a Substitute for Iodoform.—HEINZ and LIEBRECHT (*Berliner klin. Wochenschr.*, June 15, 1891) have given the name dermatol to the basic gallate of bismuth, which is said to be a fine, odorless, insoluble, saffron-yellow, non-hygroscopic powder, unchangeable by air or light. The remedy has been used with good results in surgical, gynecological and dermatological practice. It commends itself as an innocuous, sedative, antiseptic drying powder.

Treatment of Congenital Ptosis by Means of Naphtholated Catgut.—DRANSART has devised an operation for the relief of congenital ptosis, in which an artificial tendon, created from the frontal muscle, takes the place of the absent or atrophied levator palpebræ. The new tendon is made by means of subcutaneous sutures uniting the superior border of the tarsal cartilage with the superciliary muscle. The success of the operation depends upon the asepsis of the sutures and placing them in the deep, connective-tissue layer of the skin. Sterilized catgut has answered admirably, except that it is absorbed in the course of two or three days, while twelve to fifteen are required to obtain a suitable artificial tendon. DEHENNE has found that by preparation with a solution of naphthol the rapidity of absorption of catgut may be sufficiently retarded so as not to jeopardize the success of the operation. He reports a case in which the result obtained was excellent.—*Journal de Méd. de Paris*, May 24, 1891.

Hyperemesis Gravidarum.—In an address before the Obstetrical Society of Berlin, KALTENBACH (*Zeitschr. f. Geburtsh. u. Gynäkol.*, Bd. xxi. p. 200) expressed the view that the obstinate vomiting of pregnancy was hysterical, pregnancy acting as a peculiarly favorable exciting cause of hysteria. The view is supported by the perverse aversions and sensations, the sensory disturbances, the psychic irritability and depression, and the secretory vasomotor anomalies that accompany equally pregnancy and hysteria. It thus follows that the induction of premature labor should be reserved as a last resort. The treatment should be rigidly anti-hysterical: the administration of bromides, the application of cold douches and change of surroundings.

Hairy Tumor in the Stomach.—BOLLINGER (*Münchener med. Wochenschr.*, June 2, 1891) reports the case of a girl, sixteen years old, who, for two and a half years, had presented symptoms of gastro-intestinal catarrh—anorexia, vomiting, abdominal pain and chilliness; the stools became liquid; there was insomnia; ultimately only liquid nourishment could be taken; a hard tumor was detected in the epigastrium; death finally resulted from exhaustion. At the post-mortem examination the stomach and duodenum were found distended with a great mass of hair. It was subsequently elicited that, as a child, the patient had been in the habit of pulling out hairs and drawing them through the mouth, though she had not been known to swallow any. Records of but eight other cases of the kind have been found in literature. The majority occurred in females. Analogous conditions have been found in dogs, in ruminants, in pigs and in horses.

Injections of Strychnine for Diphtheritic Paralysis of the Palate.—ROSENZWEIG expresses surprise that the treatment of diphtheritic paralysis by injections of strychnine is so little known. His own attention was attracted to the method by a publication by Henoch's. Rosenzweig reports four cases of diphtheritic paralysis of the palate which he has treated successfully with hypodermatic injections of strychnine. Three of the patients were girls, and one was a boy; the ages ranged from six to twelve years. The usual symptoms of palsy of the palate—nasal voice and regurgitation of food through the nostrils—were present. The neck was selected as the place for the injections, the dose given being from two to three milligrams ($\frac{1}{32}$ to $\frac{1}{20}$ of a grain), and it was repeated daily. In the first case the nasal speech and difficulty in swallowing disappeared after five injections, but the patient seems to have remained under the strychnine treatment, combined with tonics, for twenty days. In the second case the patient recovered in nineteen days. In the third case all paralytic symptoms disappeared in nine days, while in the fourth case the paralysis of the palate was overcome after three injections. Nothing is said to indicate that there were any bad effects from the doses of strychnine employed, though they are rather large for children.—*Therapeutische Monatshefte*, April, 1891.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, AUGUST 1, 1891.

MEDICAL ADVICE WITH MEDICINES AT SEVENTY-FIVE CENTS A YEAR.

IN the last number of a highly esteemed English exchange there is a very suggestive letter from a correspondent, who frankly confesses that he is regularly attending children at the rate of fifty cents a year, and adults at seventy-five cents a year, medicines included, and he is doing this even though the patients live three miles away. The writer justifies himself in this way:

"I think we may justifiably feel some pride that we have a higher aim than simply working for pay, and that the care and attention which we give to any particular patient is not governed by the amount of the fee. What shall be said of the hospital physician who gives his services for nothing at all? often thereby depriving the humbler practitioner of patients who could well afford to pay a moderate fee. Besides, is there any greater dignity in demanding a higher than a lower fee? Is there any dignity in taking fees at all, or is the whole of the nobility and dignity dependent on the spirit in which the work is done?"

This defence gives glimpses of certain characteristics and social conditions of English life that provoke sad and serious thoughts. It also stimulates questions as to the beam in our own eye. With us there is certainly not any such widespread poverty as that of which we catch the hint between the lines of the correspondent. It is commonly said that as yet in America one can make a decent living by the practice of medicine, without stooping to the five or ten or twenty-five cent fees not uncommon in England.

But with us there are several considerations to modify our self-content. First, it may be noted that gratuitous treatment at the private office is very much more common with us than in other countries. It comes natural to the American character to ask a good-sized fee, or be quite as willing to let the service go purely *gratis*. We consider compromise beneath our dignity. It is said that a friend of a prominent New York lawyer sent the legal light a check for $500 in gratitude for a bit of advice incidentally given with a passing handshake. The check was returned with the curt reply that his smallest fee or retainer was $1000. In medical practice there are similar habits of thought and feeling, and the average of fees and non-fees greatly reduces the supposed regular charge.

In the next place, the thin edge of the wedge is being driven in much faster than is commonly confessed or generally known. It is true that homeopaths are very numerous who give advice and medicines for fifty cents a visit, and not infrequently for twenty-five cents. Willingly or unwillingly, physicians are forced to compete by "meeting" the quack's price.

Another phase is shown in the formation of medical clubs. These are not at all uncommon, and a doctor is hired by the year at a very low rate. Various fraternal organizations succeed by this plan in getting their members and the families of their members treated for merely nominal fees.

The next step in the *descensus Averni* is that taken by the drug-store doctor. The writer once saw a physician enter his drug-store, and passing along the rows of waiting patients briefly learned the symptoms each complained of, in the presence and hearing of all the others. He then prescribed, and the prescription was at once handed to the clerk. There was no charge for the advice or prescription, the medicine alone being charged for. Sometimes the doctor has a private office behind or within the store. More rarely the office may not be connected with the store.

The dispensing druggist must not be forgotten. However undignified, and even illegal, this method of evading the physician may be, it is wretchedly

common. "Give me something for my headache," "for rheumatism," "for stomach-ache;" "give me a dose of antipyrin," "of chloral," etc., are the demands made of the druggist many times every day. He rarely refuses.

The last and lowest depth is the hospitals and dispensaries, emulous of each other, and running a competitive race for patients. In the letter of our New York correspondent published July 18th we see how the patronage of well-to-do people is sought by the attendants of clinics founded "for sweet Charity's sake," medicine and advice being dispensed gratuitously to those with no claim or right to them, to the degradation of the patient, with injustice to the young and struggling physicians, and in defiance of the objects of those bequeathing the funds. As regards a large proportion of American out-patients it must be admitted that they are well able to pay something for their medical treatment, however small the amount might be. The self-respecting visiting and resident physicians of these charitable institutions should spontaneously do away with the abuse, and form rules and establish habits that will bar out those that could pay. It is quite beyond comprehension that members of a noble guild like ours should be so destitute of *esprit de corps*, so reckless of the wrong done the younger members of the profession. Unless reform come spontaneously and quietly, it must sometime come from without and brutally. Those who supply the funds will learn of the way their charity is being used to wrong both patient and physician, and supplies will stop with a suddenness born of righteous indignation, but necessarily followed by other evils. Moreover, young physicians would be better than human if they stood calmly by and allowed their proper *clientèle* to go in crowds to the dispensaries and hospitals to be treated gratis by men whose practices are established. They will meet such useless and brutal competition by establishing other and rival institutions, or by taking up one or more of the methods before described. These things, as we have tried to show, are already well under way, and with true American earnestness, pushed by the facts of a rapidly increasing proportion of practitioners to population, as also by the growing poverty of the city masses—when war is fully declared, it will not be exactly "war with rose-water." The net result will be a sharp lowering of professional dignity, a ruinous cutting and reduction of professional fees, and the further entrance into medicine of commercial customs and auctioneer methods.

In the meantime, will those who have the remedy in their hands remain satisfied to let things drift, and drift, and still drift?

DRUMMERS FOR DOCTORS.

WE rubbed our eyes, re-cleansed our spectacle-lenses, looked again at the journal cover, made sure it was not a summer theater we were in—but had at last to confess that the words stood as given below. The periodical is "our esteemed contemporary," *The Journal of the State Medical Society of Arkansas*, and in its "Miscellany" there appears without comment or explanation the following:

"LIST OF DRUMMERS FOR DOCTORS IN THE CITY OF HOT SPRINGS, ARK., TO WHOM LICENSE HAS BEEN ISSUED IN CONFORMITY TO AN ORDINANCE PASSED JUNE 17, 1889."

Since we do not wish to give a free advertisement to these gentlemen we can only explain that the list comprises the names of twelve doctors, each followed by the names of his "drummers." One doctor has but one drummer, five have two, one has three, two have five, one has six, one ten, and one has eleven — fifty-one men "touting" and "heeling" for the doctors of one small town!

The City Clerk swears the list is a true abstract of the office records, and a note appended explains that the "hotel and doctor drummers" are by ordinance required to take out a license and wear badges showing their vocation. (What excellent devices and mottoes for these drummers' badges might be found in the medieval "Dances of Death," or copied from the old Flemish painters of resurrection scenes. Picture, for example, the fright and resistance of some fleshless, sin-eaten old *roué* being pulled with frolicsome fury by a dozen satanic minions, happy at last in securing their long-awaited prey!)

Will our contemporary inform us if the undertakers of the city also have "drummers," and if these ply their persuasive powers upon all invalids arriving at Hot Springs? And finally, it might be well to know if the city cemetery is a stock company, and how many shares are owned by the "doctors" and their "drummers."

What a fine hint the report might give Gilbert and Sullivan, or the concocters of modern opera bouffé run mad! Can anything be imagined more uproariously funny?

But there is a mawkish suggestiveness in it that reminds one somewhat of the clown that laughed, and laughed, and laughed again, simply at the thought that the devil had him by the ear and that he was at last and actually being marched straight to—hell!

HUMAN VIVISECTION.

SOME three years ago HAHN,[1] a Berlin surgeon, reported the experimental inoculation of six pieces of carcinomatous tissue taken from one breast of a woman and transplanted into the other breast. In fourteen days the grafts had united, and in four weeks the microscope showed the tissues about the transplantations to be carcinomatous. Strangely enough, this observation seems to have passed unnoticed and uncondemned even by those that are now very properly shocked at recent similar procedures. Latterly, according to the daily papers, Dr. LEIDIG, of Berlin, charges Dr. BERGMANN and Dr. HAHN with having performed repeated experiments of the same kind, and, if the newspaper report can be trusted, Dr. BERGMANN thus meets the threatened official inquiry:

"My conscience does not reproach me in the slightest experiment. I have not inflicted on the patients a moment's pain nor shortened their lives a minute. This outcry has not affected my practice. My patients are arriving from all parts of the world."

Again, in the Paris Academy of Medicine, PROFESSOR CORNIL has just reported two similar inoculation experiments, performed in Paris, "by a stranger," upon two women, while anesthetized and without their consent.

These things are, happily, at last arousing a cry of indignation throughout the civilized world. If an enemy of modern scientific medicine can be supposed to exist, he could not inflict upon her a more diabolically effective blow than is thus given by members of her own household and faith. Fanatics will pounce upon these facts and use them with all the zeal of half-knowledge and the fury of unrestrained sentimentalism.

It is indeed astonishing that a great surgeon should calmly dare the indignation of the civilized world and justify his course by his lack of conscience and his worldly success.

We hope later reports will bring better news and show that not even one physician has been so thoughtless of the good of his guild, and so reckless of his own final fame as to give utterance to such "noon-day vices and brazen-browed iniquities."

[1] Berl. klin. Wochenschr., May 4, 1888.

HOMEOPATHIC LAWS.

IN reference to the communication of our correspondent, inserted elsewhere in the current number of THE NEWS, we would add a word as to the essentially unscientific attitude of mind evinced in the tacit assumption that a therapeutist must be governed by any so-called "laws" whatsoever. The scientific type of mind knows nothing, and will not allow itself to know anything, concerning any law of "similars" or of "contraries." It forms judgments only upon evidence, without the domination of any deductive law or principle. It seeks physiological results, whether obtained by small or by large quantities of a drug. The fundamental reason that sincere homeopathy is a disgrace to modern civilization, and must eventually be buried in deserved oblivion, is that in method it is deductive instead of inductive, that it is pursuing the chimeras of a crazy medievalism and of metaphysical will-o'-the-wisps, instead of seriously seeking to know facts and to understand their lessons.

But above and beyond the type of homeopathy that is sincere there is the type that is insincere. The cunning sharper is more dangerous and execrable than the foolish weakling, and it cannot be doubted that the number of those that believe and practise HAHNEMANNIAN homeopathy is extremely small as compared with the great majority of those that neither believe nor practise the follies that their foolish patients think supremest wisdom. If the imbecilities of speculative homeopathy are disgusting, the hypocrisy that for gain pretends to believe them is a stench in the nostrils of all good men.

CORRESPONDENCE.

MONTREAL.

Visit of Mr. Ernest Hart—Branch of the British Medical Association—Changes in the Staffs of Medical Schools—Medical Education of Women—An Interesting Medico-legal Question.

MR. ERNEST HART, the well-known London surgeon and editor of the *British Medical Journal*, accompanied by his distinguished wife, has been "doing" the country, and spent a few days in Montreal. He was taken in hand by Dr. Hingston, of the Hotel Dieu, and matters of interest, scientific and general, pointed out to him, and every attention was shown him to make his short visit pleasant. He was dined at one of our fashionable clubs. A hurried meeting of some of our leading medical men was held in the rooms of the Medico-chirurgical

Society, and Mr. Hart explained the working of the British Medical Association, the largest medical corporation in the world. Branches throughout the Empire are in existence, and one was suggested for Montreal. As a result of this meeting, a number of names were given in and a branch decided upon. Dr. Hingston is to be President, and J. Chalmers Cameron, M.D., Secretary. For the annual subscription fee of $5.25, the substantial return of a copy of the great London weekly, the *British Medical Journal*, is assured to each member.

The teaching season being over, the usual European trip is being indulged in by several of our well-to-do M.D.'s. Next fall a good deal of change will be noted in the staffs of our four medical schools. At McGill, pathology is to have a chair and a salaried professor. The work has heretofore been done by a lecturer, Dr. Wyatt Johnson, who recently resigned. Dr. H. A. Lafleur, for some time first assistant to Dr. Osler in Baltimore, has returned to his alma mater, and will assist Dr. Geo. Ross, sub-dean, in the work of clinical and didactic medicine. At Bishop's College, Dr. Lapthorn Smith takes the chair formerly occupied by the late Dr. E. H. Trenholme. The long-expected amalgamation of the Montreal School of Medicine with Laval University is now accomplished, the necessary legislation having been secured. Dr. L. B. Durocher is to be President, and Dr. H. E. Desrosiers, Secretary, of the new Faculty. The difficulty of accommodating two sets of professors in one row of chairs has been met by the offer of a solatium of a financial character to those who by choice or necessity retire. The amount will be, according to report, four dollars per lecture hour.

A curious thing occurred recently, having a bearing on the medical education of females. McGill, it is well known, is opposed to the admission of the ladies, and at the Montreal General Hospital tickets were refused to female medical students, the influence of McGill being very strong in that corporation. At the last quarterly meeting of the governors, a motion was made to grant a clinical ticket to one of the female applicants. At once violent opposition was offered by medical and lay members of the Committee of Management, with threats of resignation, and the motion was lost. The friends of the ladies did not have long to wait, however, for in less than a week the ticket was granted. In explanation of this sudden turn about, it was admitted that danger to the subscription-list had loomed up so distinctly after the vote as to prove an effectual eye-opener. As the hospital is, in a measure, dependent on the yearly subscriptions, the wishes of the suppliers of the financial sinews cannot be ignored.

A case of much interest, alike to medical men and pharmacists, has just been before the courts. Some months ago, a French medical practitioner of the city had a case of pertussis under treatment, and decided to exhibit bisulphate of quinine. He prescribed for the patient, a young infant, one-quarter-grain doses, in powder. By inadvertence, he wrote the prescription bisulph. *morph.* The chemist, finding morphia clearly written, dispensed the only sulphate of morphia found in commerce, naturally supposing the *bi* to be a debatable chemical prefix of no therapeutic influence. The child was taken to the country, and the powders soon did their deadly work.

The physician, without having seen the child, granted a certificate of death from whooping-cough. Subsequently, another child of the family having acquired the malady, the father consulted the doctor again, and was advised to make use of the remaining powders. The administration to the second patient having produced symptoms which reminded the parents of the previous fatal case, they became alarmed, and expressed their fears to the doctor that something was wrong with the medicine. The matter was then looked into, and the real state of things discovered. The father brought suit jointly against the doctor and druggist for the death of the child. The doctor sought to lay the responsibility on the druggist, claiming that the dispensing of a *bi*sulphate for a sulphate was an improper substitution. The druggist pleaded that the dispensing of a sulphate for a non-existent bisulphate was customary, and showed in evidence that a prescription purposely written *bi*sulph. had been presented in eleven first-class pharmacies in different cities—New York and elsewhere—and in every case but one the ordinary sulphate was dispensed without hesitation; in the only one refusing, the clerk had heard of the present case, and said so.

Judge Jetté held both defendants culpable, giving judgment against the doctor for $250 damages, and against the druggist for $50. After taking counsel with other judges, he had decided that the least deviation from strict regularity in the wording should have led the druggist, previous to the dispensing of a poison, to take the extra precaution of consulting the writer of the prescription.

Some of the lessons from this sad case are obvious enough. The giving of a death-certificate without seeing the patient cannot be approved. When a prescription calling for morphia or other strong poison is presented at the dispensing-counter, the precautionary inquiry, "Is this for an adult or for an infant?" would be wise.

HOMEOPATHY.

To the Editor of THE MEDICAL NEWS,

SIR: *Re* your editorial on "The International Homeopathic Convention." Let me premise that I am a regular or rational physician, the son of a regular or rational physician, that I have subscribed for and read your periodical for nearly a quarter of a century, and am a member of the Canada and the Ontario Medical Associations. Thus much for my orthodoxy.

Several years ago exigencies of practice which it is not necessary to particularize convinced me, much against my will, that in several instances homeopathic therapeutic measures had succeeded when regular school therapeutic measures had failed. I began to investigate and test, and think that possibly my conclusions and ideas would prove of interest to some of your readers, though from the tenor of your editorial I would hardly expect them to interest you.

1. There are two distinct classes of homeopathic practitioners—the high and the low dilutionists—besides the division into educated and uneducated common to all civilized society.

2. That the high dilutionists accept and believe, or pretend to accept and believe, all the absurdities and

senseless drivel of homeopathy. They are analogous to the class in our own school who are, or pretend to be, carried away by such fads as Brown-Séquard's elixir of life. The low dilutionists are, many of them, honest, intelligent, and shrewd men that have grasped the fact of what is known as the law of similars, but have unfortunately jumped to the conclusions, that this law is universal—which is not proved, and that it is the only therapeutic law worthy of consideration—which we know to be false.

3. Homeopathy is an enormous balloon inflated by gas emitted from one or two genuine therapeutic principles, and the regular school is stupid enough to be scared by the size of the bag, at the same time trying to believe that the contained gas has no origin in fact.

4. It would be much better for medicine and humanity for the regular school to cause the balloon to collapse by boldly accepting the law of similars, the minute dose, and the dynamic power of trituration as true within the limits of proof, and adopt them as parts of our therapeutic armamentarium, instead of blindly groping for them while denying their existence, as our therapeutic leaders, Brunton, Bartholow, and Ringer, are doing.

5. That these principles are true within certain limits is demonstrable. Elaborate proof cannot be submitted here, but consider mercury alone—of which Dr. Ringer says: "It is singular how similar the phenomena produced by mercury are to those which result from syphilis." In this he merely echoes his predecessors, for years ago Stillé wrote: "Alterative medicines act in a great degree in the same direction as the diseases which they cure; mercury, for example, tends to produce lesions which bear a close resemblance to, if they are not identical with, those caused by syphilis." Thus much for the law of similars. As to the change in function and increased power produced in drugs by trituration, called by homeopaths "dynamization," consider the effect of two or three ounces of crude mercury in the alimentary canal, in connection with the effect of half a dram of the same metal triturated and exhibited—*per os*—in the form of blue mass. Call it what you please, dynamization, demonization, or what not, the increased power and change of function produced by the trituration is an entity.

6. There is absolutely no reason why any physician should not treat one patient upon the principle of the law of contraries and its necessarily large doses, and his next patient upon the principle of the law of similars and its necessarily minute doses, as may seem good in his eyes—provided always he has enough intelligence and knowledge to know which principle he is using at any given time. Instead of doing as even some leaders in therapeutics do now-a-days, who, having seen a drug succeed upon the principle of the law of similars in a minute dose, adopt it and prescribe it in large doses. See our use of pulsatilla.

7. If this straightforward course was pursued it would tend strongly to the rationalization of therapeutics and the extinction of homeopathy as a distinct school of medicine.

My positive statements are excused by my premising that they are merely *my* conclusions and ideas. Yours, etc.

Geo. M. Aylsworth.

Collingwood, Ont., Second Street cor. Pine.

ATMOSPHERIC CONDITIONS AND PNEUMONIA.

To the Editor of The Medical News,

Sir: On page 20 of The Medical News of July 4th is a brief editorial on "The Etiology of Croupous Pneumonia," summarizing results of the study of one hundred cases. Although this is too small a number to base conclusions upon, it seems to me probable that the conclusions (which are there tentatively suggested) are correct, because in the main they agree with those published in the *Annual Report* of the Michigan State Board of Health for the year 1886, based upon a study of very much larger numbers of cases and of deaths—namely, over 500 deaths from pneumonia in Michigan, 11,000 in the United States armies, 4000 in the European troops in India, 6000 in the native troops of India, 114,000 in London, England; nearly 1000 cases of sickness from pneumonia reported to the Collective Investigation Committee of the British Medical Association, 49,000 cases of sickness from pneumonia in the United States armies, and 31,000 weekly reports of sickness (including pneumonia when present) under the observation of the representative physicians in Michigan.

Herewith I send you a reprint of the article, in which are tables and diagrams graphically illustrating the same, showing the very close relation of pneumonia to temperature and humidity of the atmosphere, and to the daily range of atmospheric pressure (conditions mentioned in your brief editorial), and also to atmospheric ozone and to wind. In the article on "The Causation of Pneumonia," here referred to, I claimed that "the causal relation of atmospheric temperature is now established. I believe it is a general law, applicable throughout the world." Very respectfully,

Henry B. Baker.

NEWS ITEMS.

The Fiske Prize.—The Trustees of the Fiske Fund have awarded a prize of $300 to Dr. Robert W. Lovett, of Boston, for an essay on "The Etiology, Pathology and Treatment of the Diseases of the Hip-joint."

The Case of Mr. W. H. Gladstone.—As reports, more or less inaccurate, have appeared in the daily papers concerning the illness of the late Mr. W. H. Gladstone, we are glad to be able to state the actual facts. Mr. Gladstone five years ago showed the symptoms of the commencement of the growth of a cerebral tumor. These symptoms consisted in the most remarkable localized epileptiform seizures, followed by motor aphasia and paralysis of the right arm and leg. The hemiplegia and other symptoms gradually became more pronounced during the last few years. The history of the case tended to show that the growth was non-malignant, and a very prolonged course of iodide of potassium and mercury produced no amelioration in the condition. Quite recently a consultation was held between Sir Andrew Clark, Dr. Hughlings Jackson, Dr. Ferrier, Mr. Horsley, and Dr. Prickett. The result of this consultation was the opinion that an exploratory operation might be undertaken with the view of ascertaining whether the tumor could be removed, and to relieve pressure. At the same time it was pointed out that possibly it was too

deeply seated and too extensive for safe removal. On this understanding the operation was performed, but, although Mr. Gladstone recovered from the effects of the chloroform, his strength did not enable him to rally from the shock, and he slowly sank. It was found that the severe and prolonged pressure had flattened the medulla oblongata and basal structures.—*British Medical Journal*, July 11, 1891.

John Frederick Groenevelt.—The Surgeon-General of the Marine-Hospital Service has issued the following circular:

It becomes my sad duty to announce the death from yellow fever of Assistant Surgeon John F. Groenevelt, at the United States quarantine station, Chandeleur Islands, Gulf of Mexico. He was taken sick on the 18th of June, while in the active performance of quarantine duty, and died on the night of the 29th.

Assistant Surgeon Groenevelt was born in Leipzig, Germany, July 19, 1865, of American parents. On his father's side he was a descendant of Baron Arnold de Groenevelt, of Netherlands fame. His mother is a native of Louisiana. In 1878, at the age of thirteen, he entered the Tulane University, in New Orleans, and remained for seven years a student in its academic and collegiate departments, during which time he received the Greek medal, the Latin medal, the medal for mathematics, and the ancient-history medal. In 1884 he received the degree of Bachelor of Arts, and was elected president of the academic corps by the students, a place requiring tact and firmness in enforcing the discipline of the institution. In 1885 he received the degree of Master of Arts, and at once began the study of medicine under Dr. F. Loeber, of New Orleans, as preceptor. After four years of study in the medical department of Tulane University, he was graduated April 23, 1889. In 1886, while still a student, he was made interne of Touro Infirmary, and in 1887, after a competitive examination, was appointed interne in the Charity Hospital, of New Orleans, which position he filled with credit for a period of sixteen months, resigning to accept a similar position in the U. S. Marine Hospital, in the same city. Subsequently he accepted a remunerative offer as physician to a portion of the engineer force of the Mississippi River Commission, and was stationed at the Government works on the Atchafalaya River.

He was appointed Assistant Surgeon to the Marine-Hospital Service July 11, 1889, after a competitive examination, passing No. 1 in a class of twenty-six candidates.

As an officer, Assistant Surgeon Groenevelt was held in high esteem, both by those under whose immediate command he served and by the Department. His ability is illustrated by the varied and important trusts that were confided to him, and his courage by his readiness for service in the position in which he lost his life. He had shown an inclination and special aptitude for quarantine duty, and in this branch of the service his loss, for public reasons, is particularly deplored.

Personally, Dr. Groenevelt was endowed with a high sense of honor, a general culture, and scientific attainments that won for him the attachment and respect of those with whom he was brought in contact. To his bereaved father and mother, and other near relatives, I have assumed to extend the sympathy of our corps. The service has lost a young and brilliant officer, and the public an able and earnest devotee in the cause of public health.

It is hereby ordered that the flags at the Gulf quarantine station, Chandeleur Islands, be kept at half-staff and half-mast for a period of thirty days, and that the officers there on duty wear the usual badge of mourning for the same period of time.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 21 TO JULY 27, 1891.

ROBERTSON, REUBEN L., *Captain and Assistant Surgeon.*—Ordered, for duty, to Fort Niagara, N. Y., on the abandonment of Fort Abraham Lincoln, North Dakota.

KNEEDLER, WILLIAM L., *Assistant Surgeon.*—Granted leave of absence for one month.

TILTON, HENRY R., *Surgeon.*—Granted leave of absence for two months, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 25, 1891.

FIELD, JAMES G., *Assistant Surgeon.*—Ordered to special duty in the Bureau of Medicine and Surgery.

HOPE, JAMES S., *Assistant Surgeon.*—Ordered to the Receiving-ship "Franklin."

MORRIS, LEWIS, *Assistant Surgeon.*—Ordered to the "Ajax" and other monitors, Richmond, Va.

KEENEY, JAMES F., *Assistant Surgeon.*—Promoted to Passed Assistant Surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING JULY 18, 1891.

MURRAY, R. P., *Surgeon.*—To proceed to Gulf Quarantine, for temporary duty, July 1, 1891.

SAWTELLE, H. W., *Surgeon.*—Relieved from duty at Portland, Me.; ordered to Boston, Mass., July 11, 1891.

IRWIN, FAIRFAX, *Surgeon.*—When relieved at Boston, Mass., to proceed to Buffalo, N. Y., for temporary duty, July 11, 1891.

CARTER, H. R., *Passed Assistant Surgeon.*—Ordered to Washington, D. C., for temporary duty, July 2, 1891.

PECKHAM, C. T., *Passed Assistant Surgeon.*—Granted leave of absence for seven days, June 30, 1891.

DEVAN, S. C., *Passed Assistant Surgeon.*—When relieved at Buffalo, N. Y., to proceed to Portland, Me., for duty, July 11, 1891.

BROOKS, S. D., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days. July 13, 1891.

KINYOUN, J. J., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, July 14, 1891.

HOUGHTON, E. R., *Assistant Surgeon.*—To proceed to Cleveland, Ohio, for temporary duty, July 8, 1891.

DEATH.

GROENEVELT, J. F., *Assistant Surgeon.*—Died of yellow fever, at the Gulf Quarantine Station, June 29, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

THE OPERATIVE TREATMENT OF SOME DISEASES AND INJURIES OF THE NERVES.[1]

BY JOHN B. DEAVER, M.D.,

ASSISTANT PROFESSOR OF APPLIED ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA; PROFESSOR OF SURGERY IN THE PHILADELPHIA POLYCLINIC.

WHEN so much is written on modern operative procedures it is well not to overlook conditions that in many instances are at least quite as important for the welfare of the patient as some of those that, in the past few years, have excited much discussion. I shall briefly report some cases of certain diseases and injuries of the nerves that I have operated upon, with a few remarks on the operative treatment. This class of affections is common enough to interest both the physician and the surgeon, and is of sufficient practical value to warrant me in presenting a few thoughts for discussion.

The most important of the diseases of the nerves for the relief of which operative treatment may be resorted to are:

1. Painful affections, including neuralgia, neuritis, and neuromata.
2. Local spasmodic affections, including such diseases as spasmodic torticollis, facial tic, tetany and athetosis.
3. Chronic contractures, including those the result of old traumatisms and those due to hysteria.
4. Scleroses.

PAINFUL AFFECTIONS OF NERVES.

Neuralgia.—In studying neuralgia from a surgical as well as from a medical standpoint, it is important not to lose sight of its predisposing and exciting causes. Cases traceable to known exciting causes, such as injury of a nerve, or pressure upon or irritation of nerve trunks, and such peripheral irritation as is present when the end of a nerve becomes involved in a cicatrix, offer the best outlook for operative interference. The so-called epileptiform neuralgia, which almost invariably attacks the face and involves any one or all of the three branches of the fifth nerve, is also favorable for operative treatment. This form of neuralgia consists of two main varieties, one in which the pain is accompanied by twitching of the facial muscles, and a second in which pain is the only pronounced symptom. In this form of neuralgia the pain is paroxysmal, and may be occasioned by an attempt to swallow liquid, by a breath of cold air, etc. The three cases of excision of the superior maxillary nerve included in my list were of this variety. In one of these the slightest irritation of the lip, the nose, or the lower eyelid of the affected side would bring on a severe paroxysm of pain. Many cases formerly recognized as neuralgia are now generally believed to be neuritis, but a disease generally known as neuralgia remains. How does operation do good in neuralgia? It is probable that in this affection, as in locomotor ataxia, the pains may sometimes be due to molecular disturbance or impaired nutrition of the nerves themselves, or of the posterior root zones or posterior horns of the cord. Operation probably changes the molecular arrangement of the nerves and nerve-centers and stimulates nutrition.

Neuritis.—In neuritis, according to the stage, we have a more or less high or low grade of inflammatory process. In the chronic stage of many cases the inflammation has practically subsided, and left an exudate and adhesions, the nerve having secondarily degenerated. Operation is useful in two or three ways, either by allowing the nerve a better chance to repair, by opening the sheath and breaking up any adhesions that may be present; or, when degenerated, by disturbing the molecular condition of the nerve and stimulating it to take on regenerative action; or again, in those cases of chronic inflammation of a nerve in which physiological movements never allow it to be sufficiently long at rest to accomplish a cure, by removing a section of the inflamed nerve, and thus getting rid of the constant irritation.

Neuromata.—Neuromata are tumors occurring in connection with a nerve-trunk. They consist of two main classes, the true and the false. A true neuroma is composed entirely of nerve-filaments. This variety is very rare, some authorities even doubting its existence. False neuromata situated on or in a nerve are fibrous or fibro-cellular growths; a few also contain cysts. They are movable, but only transversely. They may occur in the continuity of a nerve, but particularly at its cut extremity, as seen in stumps. They are usually not painful, except when exposed to pressure, or so situated that ordinary physiological acts cause irritation. They are some-

[1] Read before the Lancaster County Medical Society, July 1, 1891.

times met with in large numbers. When found in the continuity of a nerve, they call for removal, which should be done with as great care as possible so as to avoid dividing the nerve. Should division of the nerve be required for the complete removal of the growth, the ends should be immediately approximated by suture. When met with in stumps, removal, if feasible, is also to be practised, and when not feasible re-amputation offers the only alternative. Nerve-stretching is advised in some cases prior to complete removal; in my hands this procedure has not proved successful. There is a variety of neuromata known as plexiform. Of this class I have met with one case, the report of which is included in my list of cases. Bowlby describes these tumors as being made up partly of soft connective tissue and fat, imbedded in which are medullated nerve-fibers and white fibrous tissue. A microscopical study of the case that I removed showed it to be made up of connective, adipose and white fibrous tissue and medullary nerve-fiber—corresponding, therefore, with Bowlby's description. The growth was very slow in forming, having been present a number of years before it came under observation. It is now five years since it was removed, and recurrence has not taken place.

LOCAL SPASMODIC AFFECTIONS OF NERVES.

Torticollis.—I have had several cases of operation on the spinal accessory nerve, and I believe that some of the reasons for the frequent failure in these operations are, first, because the movements involved in the spasm are the resultant of the action of various muscles which have diverse nerve-supplies; secondly, because the spasm is sometimes due to irritation reflected from sensory nerve-areas to the motor nerve—as, for instance, from the major or minor occipital to the spinal accessory; thirdly, in a few cases at least, because the spasm is due to a lesion of cortical or other encephalic centers.

Facial Tic.—In cases of facial tic, or so-called histrionic spasm, in which the muscles supplied by the facial nerve are affected, the operation of nerve-stretching has been performed a great many times, but most of the cases have been failures or only temporarily successful, for the simple reason that the vast majority of cases are due either to degenerative lesion of the facial nucleus or to cerebral irritation or degeneration.

Tetany.—In cases of tetany, nerve-stretching may for a time arrest the tremor and twitchings associated with the spastic contractions, but the operation is not usually to be advised.

Athetosis.—Nerve-stretching in the treatment of athetosis has not been of much avail, causing only temporary cessation of the clonic spasms and a paretic condition of the affected part. When the paresis passes off, the tremor and spasm return. Evidently the majority of such cases cannot be permanent successes, since the source of the spasm or tremor is a persisting central lesion, usually situated in the cortex or near the thalamus in the interior of the brain.

CHRONIC CONTRACTURES OF NERVES.

In cases of chronic contracture of nerves the result of old traumatism, benefit from the operation is dependent upon the relief of the chronic neuritis and the loosening of the attachments present. In hysterical contractures operation may afford relief, but these cases are quite as amenable to treatment much less radical in character. In these cases, if the operation of nerve-stretching does good at all, it is by acting on the spinal centers, or by mental impression.

SCLEROSES.

The usual temporary effect of nerve-stretching in the treatment of lateral sclerosis is that the spastic condition of the muscles is partially overcome, the tingling in the extremities disappears, locomotion is improved and the reflexes are not changed. The benefit is not permanent either in this affection or in posterior sclerosis. Failures have sometimes followed this operation, owing to incomplete measures having been adopted, the nerve having merely been exposed and returned to its original position.

Nerve-stretching, as an operative procedure, has had rather a limited range of application. The benefit resulting from its performance has been thoroughly discussed without any definite conclusion as to the manner in which the result is obtained having been arrived at.

Pathological researches have been conflicting and of no practical value, hence the neurologist and surgeon are justified in acquiring actual experience by means of clinical experimentation in other affections than those which have in the past been recognized as fit subjects.

NERVE-INJURIES.

The most common form of nerve-injury for which the surgeon is called upon to operate is division. The complication formerly feared, and which, therefore, deterred surgeons from approximating the cut ends of the nerve by suture, was tetanus. Since the days of antiseptic surgery this complication is no longer feared. It is now a proved and acknowledged fact that the origin of tetanus is microbic, hence the use of antiseptics prevents infection and lessens very materially the chances of this complication arising. There is no doubt that the ends of a divided nerve, if left to themselves, sometimes unite. But this does not offer

an argument against suture, and I therefore take it for granted that every surgeon would unhesitatingly use the suture. The operations for the suture of divided nerves are primary and secondary. Primary suture is stitching together the ends of a divided nerve immediately after the injury or within a short time afterward and before healing of the wound has commenced. Some surgeons believe that when the section is clean, with but little separation and not complicated by an extensive wound of the neighboring soft parts, suturing should not be practised; but with these I cannot agree, for if it is a justifiable procedure under reverse conditions, it is all the more indicated when it is most likely to be followed by success. One or more sutures, depending upon the size of the divided nerve or nerves, are to be passed through the trunk, neurilemma and tubules inclusive, a short distance from either end, and drawn tight, making apposition perfect. The suturing completed and the wound closed, the limb is to be placed and fixed in a position favoring relaxation of the injured nerve. I prefer the aseptic silk suture, believing this in the long run to be most reliable. What disposition is to be made of either end or both ends if found to be much lacerated and contused? The answer to this is that if the contused and lacerated nerve-tissue is believed to be devitalized, it should be removed before the suture or sutures are introduced.

Both the proximal and the distal ends are then to be stretched, when, if apposition cannot be effected without too great resulting flexion, recourse may be had to one of the following means: *a*. Split the cut end of the nerve in such a way that by drawing down the section from the proximal end it can be united to the section turned up from the distal end. *b*. Unite the distal end of the divided nerve to a neighboring nerve. *c*. Implant a section of nerve taken from an amputated limb or from a lower animal. *d*. It has been suggested to connect the divided ends of the nerve with strands of catgut; also to introduce a decalcified bone tube between the ends of the nerve, on the supposition that nerve-tissue will be prolonged along the strands of gut or into the caliber of the tube. This latter means furnishes a framework on which the granulations can spread.

Should primary suture fail to bring about complete restoration of the part, another operation consists either in freeing the nerve, if confined by scar-tissue, or of secondary suture. Secondary suture, of which I report one case, is not by any means so simple a procedure as primary suture. The first difficulty is in finding the distal end of the nerve. This is best accomplished by making a careful dissection, the limb having been rendered bloodless. If there be trouble in finding the distal end, the nerve below the section should be exposed, as suggested by Bowlby, when it can be traced to the scar. The ends of the nerve having been exposed, the next step in the operation consists in making a section of them. The proximal end, if found to be bulbous, is to be divided near the junction of the bulb with the trunk; the distal end, if found bulbous, is to be treated in the same manner as in the case I report. If the distal end is found not to be bulbous, but atrophied, the usual condition met with, a very small section is removed. The next step is to determine whether or not the ends can be brought into apposition. If not, they are to be treated in the manner spoken of under the head of primary suture. The length of time required for restoration after primary suture is usually short, but after secondary suture it is problematical and often quite long.

Report of Cases.—To illustrate my remarks, I have selected sixteen cases from those upon which I have operated. Of this number there were six of trifacial neuralgia, in three of which I removed the entire superior maxillary branch, in one the entire inferior dental branch, and in two a portion of the inferior dental branch; one of stretching the posterior tibial for obstinate plantar neuritis; two of stretching the sciatic for neuralgia; one, for neuritis, of excision of a portion of the long saphenous, immediately after its exit from Hunter's canal; one of excision of the greater portion of the supra-trochlear, also for neuritis; one of ligation of the spinal accessory upon two consecutive occasions for spasmodic torticollis; one of freeing the musculo-spiral from encroaching callus; one of stretching the median for tetany; one of removal of a plexiform neuroma; and one of secondary suture of the external popliteal (peroneal).

Case I. *Complete Removal of the Superior Maxillary Branch of the Trifacial.*—Mrs. S., aged forty-eight, was a patient of Dr. H. C. Clark, of Woodbury, N. J. The history of the case is, in short, that she had for seventeen years suffered with trifacial neuralgia, during all of which time, to obtain any relief, she was required to take morphia, and latterly in very large and repeated doses. She had been given the benefit of all doubt in the way of internal and local treatment, both by Dr. Clark himself and by noted neurologists throughout the country. More than two years ago I removed the nerve in question, doing Carnochan's operation, which I prefer. Complete and permanent relief followed the operation. At present writing, June 23, 1891, there has been no recurrence.

Case II.—The patient was referred to me by Dr. C. K. Mills. He was a man aged seventy-five years, a letter-carrier, and therefore exposed to all kinds of weather. Several years before he came under Dr. Mills's care he began to suffer with severe pain in the side of the face beneath and above the eye, and

sometimes in front of the ear. The history of the case was the usual one of a gradually augmenting trigeminal neuralgia. Many remedies were used by various physicians. He had also been operated on twice by two different surgeons. At the time the patient was placed under my care the attacks were practically continuous. I removed the superior maxillary branch of the fifth nerve, giving the patient permanent relief.

CASE III.—The history of this patient—Mrs. M., aged fifty-four years, a patient of Dr. H. A. Smith, of Philadelphia—is almost parallel with that of Case I. The neuralgia was of seventeen years' standing. Removal of the superior maxillary nerve was followed by relief.

CASE IV. *Removal of the Inferior Dental Branch of the Trifacial.*—T. M., aged fifty-four years, a farmer, suffering from neuralgia of the right inferior dental nerve, was admitted into the surgical wards of the German Hospital December 16, 1889. The history of the case showed it to be one of long standing, and one in which an unsuccessful operation had been done one year before coming under my care. I removed the entire inferior dental nerve. The portion occupying the canal was exposed and taken out by chiselling away the outer wall. Immediate relief followed the operation, and at the present time the patient, through his sister, informs me that he is perfectly well.

CASE V.—J. H., aged thirty-seven years, housekeeper, was admitted into the surgical wards of St. Mary's Hospital February 13, 1891, with a history of severe neuralgia located in the region of the inferior maxilla. The pain, which was paroxysmal, extended from the ramus of the left inferior maxilla to the chin. These seizures lasted from two to three hours, and occurred three or four times daily. Hot or cold liquids, or solid food, taken into the mouth brought on severe paroxysms. The teeth on the affected side had been removed, without relief. A portion of the inferior maxillary nerve had been excised, with temporary relief; the trouble returned, and her suffering was almost unbearable. A second operation was performed, which consisted in trephining the ramus of the lower jaw at the point of entrance of the inferior dental nerve. The opening was enlarged upward, and the nerve traced to its origin from the inferior maxillary. The outer wall of the dental canal was then chiselled away as far as the site of the old operation, where the nerve was found fixed by fibrous and connective tissue containing nerve-fibers. The exposed nerve was then removed.

CASE VI.—A. M., aged thirty-three years, a housewife, was admitted into the wards of the German Hospital August 1, 1890, suffering from pain, paroxysmal in character, referred along the course of the inferior dental nerve. She had suffered for a long time, and had received a thorough course of treatment without affording relief. A portion of the nerve was removed, with complete relief from pain.

CASE VII. *Excision of the Long Saphenous Nerve.*—C. K., aged fifty years, a tinsmith, was admitted to the surgical ward of the German Hospital, December 9, 1890, suffering from unmistakable chronic neuritis of the long saphenous nerve supplying the inner side of the knee and leg. The nerve was exposed immediately after its exit from Hunter's canal, and a section of two inches removed. The recovery was perfect.

In circumscribed plantar neuritis, when the pain is confined to the third metatarso-phalangeal articulation, or more particularly to the fourth, the ingenious operation of Dr. Thomas G. Morton, of Philadelphia, that of excision of the articulation, often serves to accomplish a cure. In cases of this character, however, I cannot but think that excision of the affected plantar nerve or nerves would accomplish all that is accomplished by the removal of the joint. This excision of the nerve or nerves must be done radically, taking them out as far back as possible, and not being satisfied with removing a section, say of only one inch in length, which would afford but temporary relief.

The rationale of the operation as suggested by Mr. Collier is, that as the disease consists essentially of an excessive intermittent and irregular discharge of energy along the spinal accessory nerve, the introduction of increased resistance in the course of the nerve and the possible deflection of some of this energy into other structures than the sterno-mastoid and trapezius muscles might result in an abatement or cure of the trouble. Mr. Collier has reported one successful case. Temporary improvement followed the operation in the case I report, but I am sorry to say it was but temporary, as in a short time the spasms returned with their former severity. Thinking perhaps the technique of my operation was faulty, I repeated it, but with a negative result. Of the different operations performed for the relief of this condition, namely, stretching, excision, and ligation of the spinal accessory nerve, also myotomy of the muscles at fault, and also the operation devised by Dr. W. W. Keen—division of the cervical nerves supplying the posterior cervical rotators—that of ligation strikes me as the most philosophical. It is questionable, however, if spasmodic torticollis can be permanently cured by operative treatment alone, unless the centers governing the movements of the muscles affected can be definitely located and successfully removed. Even were this result attainable, recurrence of the spasms would be as likely to follow as in other cases of focal (Jacksonian) epilepsy, after the removal of a portion of the cortex.

CASE VIII. *Excision of the Supra-trochlear Nerve.*—The patient, a lady, was seen by me in consultation with Dr. O. P. Rex, of Philadelphia. She was suffering from obstinate facial neuralgia, limited to the distribution of the supra-trochlear. The ordinary line of treatment failing to afford relief, the nerve

in question was removed. There was complete recovery.

Case IX. *Plexiform Neuroma.* — W. H. P., twenty-nine years old, a hatter, was referred to me by Dr. Jno. Strobel, of Philadelphia, giving the following history: For eleven years he had had over the olecranon process a growth which had become of the size of a large English walnut; the overlying skin was dark-bluish in color. The patient had for six years worn an appliance to prevent movement of the elbow, and to protect the growth from the clothing, it being so sensitive that the slightest irritation would suffice to excite unbearable pain. So great, indeed, was the pain caused by the slightest interference with the growth, that the patient would not permit me at the first visit to examine it. I believed it to be a neuroma and advised its removal. The operation was performed in December, 1889. Recovery was prompt and satisfactory.

Case X. *Removal of Callus Encroaching upon the Musculo-spiral Nerve.*—The patient was a man, thirty-five years old, who had sustained a fracture of the upper portion of the shaft of the right humerus, the healing of which resulted in exuberant callus, involving the musculo-spiral nerve. When he came under my notice there were present all the symptoms of neuritis of the radial and posterior interosseous nerves, the terminal branches of the musculo-spiral. Recognizing the cause of the condition, I advised removal of the offending callus. The operation was done, and followed by cure.

Case XI. *Stretching of the Posterior Tibial for Neuritis.*—A. K., aged thirty-eight years, a seamstress, was three years ago admitted to the Philadelphia Hospital, in the service of Dr. C. K. Mills. She had been a drinking woman, and for several years had been subject to epileptic seizures. For ten months she had suffered from pain in the left foot, chiefly in the heel and along the outer border of the foot. The pain was accompanied by a "pins-and-needles" sensation. It was dull and aching in character. A few weeks before the commencement of the trouble in the left foot, a similar, but more severe, pain was felt in the right foot, chiefly in the heel and along the outer border. Not receiving any relief from well-directed remedies used both internally and locally, Dr. Mills asked me to stretch the right posterior tibial nerve, which I did on June 11, 1887. The nerve was exposed between the internal malleolus and the tuberosity of the os calcis. The patient was kept in bed for six weeks after the operation; recovery followed.

Case XII. *Stretching of the Median Nerve for Tetany.*—The patient, a man, twenty-eight years old, was admitted to the surgical ward of the Philadelphia Hospital, in the summer of 1888, with spasmodic contraction of the superficial flexors of the forearm (those supplied by the median nerve). Both by the neurologist on duty and myself the trouble was regarded as tetany. Therapeutic agents indicated in this condition having been tried with negative results, I stretched the median nerve. Although not resulting in absolute cure the operation was followed by marked improvement. The patient left the institution contrary to advice and I am consequently unable to record the further history of the case.

Case XIII. *Successful Stretching of the Sciatic Nerve.*—This patient, referred to me for operation by Dr. Mills, was an electrotyper, thirty-two years of age, without a history of syphilis, constitutional disease or abuse. About three years before he came under observation, he was in the habit of frequently riding the bicycle, particularly in the evenings. Three months after beginning this exercise, he noticed pain in the back of the left thigh. This persisted from day to day, and from week to week, gradually increasing in intensity. The pain seemed to start about half-way between the hip and the knee in the back of the thigh. From this point it would extend in both directions, so that the painful and uncomfortable sensation would reach the bottom of the foot, and in the other direction, the sacral region. At times he would have considerable numbness and tingling in the leg, particularly below the main focus of pain. He described the pain as at times being excruciating. For three years he had been treated by various physicians. Among other measures that were thoroughly tried were electricity, both faradism and galvanism, the actual cautery, and many internal remedies, such as iodide, the salicylates and antiperiodics, as arsenic, quinia, etc., also numerous anodynes. A course of massage and Swedish movements had also been tried, and he had been subjected to hypodermatic injections.

He suffered mostly with this pain in the evening, and when sitting down during the day. When moving about, the pain gradually decreased, and he was sometimes hardly aware of it, but it never absolutely left him. We found that the pain was still most severe at the original spot, about the middle of the posterior thigh; some numbness and tingling followed the posterior external aspect of the leg, downward to the foot. Lately it seemed as if the pain had increased in the upper thigh and in the gluteal region. On pressure no tenderness was present. We also made a careful examination by the rectum to ascertain the condition of the sacral plexuses, and determine whether or not a growth or other morbid condition was present in the pelvis, but nothing was discovered. As the patient had already been treated by almost every measure promising success, except nerve-stretching, this was advised, and, after having the operation explained to him, he consented to have it done. With strict antiseptic precautions, I exposed the nerve for several inches at the place of the greatest pain. No tumor could be detected. Some thickening and inflammation of the nerve-sheath was present for about an inch and one-half or two inches. After opening the sheath and loosening the thickened bands, the nerve was carefully stretched by pulling it strongly first in one direction and then in the other. In about two weeks the man was again on his feet. For several weeks he presented symptoms of traumatic neuritis in the sciatic distribution below the seat of the operation—spontaneous pain and hyperesthesia in the nerve-distribution, and pain on lateral squeezing of the foot—but the old pain was gone. After a few weeks of

treatment with mercurial and belladonna ointments, salicylates, tonics, rest and hot applications, the neuritis which had resulted from the operation disappeared. He was also free from the old pain, and has remained so to the time of making this report.

CASE XIV.—T. J., aged twenty-five, a laborer, a patient in the nervous wards of the Philadelphia Hospital; had been irregular in his habits, and was addicted to the use of alcohol—drinking, according to his own statement, "everything that came in his way." He had never had syphilis. In February, 1890, he complained of soreness of the hip and thigh. This soreness increased over the back of the leg and thigh, and in the upper portion of the foot; he also had a tingling and a numbness in the lower part of the leg and foot. These were greatly increased by exertion or pressure. Lying in bed greatly relieved him, and, in consequence, for the sake of the comfort that he obtained he often remained in bed two or three days at a time. In walking, semi-flexion of the leg apparently relieved the intense pain. Latterly this pain had extended to the gluteal regions. He was treated for several months with the usual remedies that are employed in sciatic neuritis, including iodide, antiperiodics, salicylates and hypodermatic injections of morphine and atropine. He improved somewhat, but no decided relief was obtained. September 3, 1890, he was removed to the surgical wards of the hospital, where I exposed and stretched both sciatic nerves. At first he had some of the same neuritic discomfort that followed the other operation, but after a week he began to improve decidedly. In less than a month he was entirely free from pain in the leg and thigh.

CASE XV. *Ligation of the Spinal Accessory Nerve for Relief of Spasmodic Torticollis.*—The patient was a woman who some months before had sustained an injury to the back of the head. The resulting clonic torticollis was of a severe nature, resisting all ordinary treatment, both internal and external. Gelsemium had been tried with apparent success, but on discontinuing the drug there was an immediate return of all previous symptoms. More radical measures being evidently necessary, Dr. C. K. Mills, under whose care the patient was, suggested to me the propriety of ligating the spinal accessory nerve of the affected side with silver wire, after the manner of Mr. Mayo Collier, of London. The nerve was exposed at its exit from the sterno-mastoid muscle, and ligated as high up as possible. The loop of wire an inch in length was left at the bottom of the wound, where it subsequently became encysted. The wound healed kindly, the wire ligature occasioning no inconvenience.

CASE XVI. *Secondary Suture of the External Popliteal Nerve.*—Mr. M., when twenty years of age, at the battle of Sharpsburg, in 1862, sustained a gunshot injury of the great trochanter of the right side, followed immediately by intense pain, causing him to fall to the ground. Upon rising and attempting to put the right foot to the ground he was again attacked with pain. Ten days later, when turned over on the left side to have the wound dressed, he suffered from pain referred to the outer side of the knee. Four months from the time of the injury, he resumed his duties in the army, being but little inconvenienced by the wound. In 1867 (five years after injury), he noticed on the outer side of the right knee a small lump, pressure upon which caused pain referred along the course of the external popliteal nerve. The swelling slowly increased in size and sensitiveness until it was about the size of a small English walnut. In April, 1890, the lump, evidently a neuroma (it was not examined microscopically), was removed by his family physician, no anesthetic being used. The removal was followed by paralysis of the extensor muscles of the foot, which indicated that the nerve had been severed in excising the growth. He consulted Dr. William Pepper, of Philadelphia, who, after a careful examination, referred him to me for my opinion as to the advisability of an operation. In view of a number of successful results obtained by secondary suture of nerves of the upper extremity, it seemed reasonable to suppose that the operation might be equally successful in the lower extremity, although no case had as yet been reported. I operated upon the patient at his home, July 1, 1890. Upon making an incision in the line of the nerve, the two ends were exposed. Both were found bulbous, which is contrary to the usual condition in such cases, the lower end being commonly frayed out and lost in the surrounding tissues. The bulbous ends were freshened by the removal of a small section, approximated by stretching and flexion of the leg upon the thigh, and held in apposition by catgut and aseptic silk sutures. The flexed position of the limb was maintained by the application of an obtuse internal angular splint worn for six weeks. At this time the splint was replaced by a plaster-of-Paris dressing. Barring an attack of traumatic neuritis the recovery was uneventful. Some months after the operation, at my suggestion he came to Philadelphia and was placed under the care of Dr. C. K. Mills for massage and electrical treatment. Examination showed a return of sensation, but not of motion.. The nerve was undoubtedly united, it being distinctly felt in its normal position, and pressure at the seat of suture causing pain along its terminal branches, which before the operation had become so degenerated that sensation was abolished. The patient has recently written to me that he is slowly regaining the power of motion, which is a further proof of good union. In cases reported by Bowlby, motion has rarely returned earlier than fifteen months after operation. This is the only recorded case of secondary suture of the external popliteal nerve—at least I have been unable to find any other.

HEAT-STROKE (THERMIC FEVER) IN INFANTS.

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HEAT-STROKE, as an effect of atmospheric heat, has as yet no place in the treatises on pediatrics. Clinical facts that have come under my observation have convinced me that as an etiological factor summer heat deserves greater consideration than it has

hitherto received and that heat-stroke is one of the pathological states that may be produced by it.

Case I.—On a September morning I was called to a baby, one year old, in good flesh, that nursed at the breast. The afternoon of the previous day it had been seized with vomiting and diarrhea; the family physician was called and prescribed neutral mixture, 2 ounces; laudanum, 12 drops. Of this mixture a teaspoonful was given every two hours, until the patient had taken about half. When I saw the patient, the pulse was feeble—almost imperceptible; the eyes covered with a film; the respiration gasping and shallow; the muscles of the jaw firmly contracted; the occiput and the whole body hot to the hand. The face was purplish and presented the appearance of a person in asphyxia. I directed an ice-bag to be placed on the head and flannel cloths wrung out of hot mustard-water to be applied to the feet. Two teaspoonfuls of a mixture of three parts water and one part whiskey were given with a few grains of hydrate of chloral. A few hours later the child was no better. As the child did not swallow, the medicine was not taken. The thermometer in the axilla indicated 106° F.; the skin was dry and hot, the respiration was shallow and infrequent. There was complete loss of consciousness. I had the child placed in a warm bath, the ice-bag being kept upon the head. For the time being, this seemed to do good, but after the child was out of the bath for a few moments it relapsed into its former condition. I therefore had the naked child wrapped in a sheet wrung out of cold cistern water (having a temperature of about 70°), and placed in its cradle and covered with a blanket; in seven minutes the sheet was hot and almost dry; it was removed and replaced by a fresh one. The respiration became deeper and more regular and the child presented the appearance of being in a tranquil sleep. The moment the sheet became warm, the baby grew restless and would groan, the respiration becoming gasping, to be relieved by the application of a freshly wrung-out sheet. The application of the wet pack was continued all the afternoon and night. At 11 P.M. the thermometer recorded 103° F. The sheets would now remain cool for half an hour. This procedure was continued regularly all night, the mother doing her duty attentively and intelligently. The next day, at 8 A.M., the thermometer in the axilla registered 101° F. The child still appeared unconscious. The treatment was continued. At 1 P.M. the child's temperature was 99¾°. At 4 P.M. consciousness returned. The wet pack was now discarded and the treatment continued with quinine in small doses, and strong coffee. The child was discharged well.

Case II.—In June I was called to see baby V., ten months old, well developed and in fair flesh; it nursed at the breast. It was taken ill in the night with vomiting and diarrhea. At the time of my visit, at 10 A.M., the baby was lying in the cradle with its eyes half closed, moaning occasionally, and restless. The temperature in the axilla was 104° F. The child vomited whenever she nursed. I prescribed a mixture of spirit of Mindererus, sweet spirit of niter, and a minute quantity of tincture of aconite, to be administered every hour. In the afternoon I was told by the mother that the child had vomited the medicine every time it was administered; the child also vomited after nursing. The temperature appeared higher. I directed the mother to omit the medicine for a few hours and not nurse it during that time; at intervals to sponge it with lukewarm water and vinegar. About 9 P.M. the temperature of the air, which had been high all day, had become intense. The temperature of the baby, despite repeated spongings, had risen to 105¾° F. There were great heat of head, great restlessness, hurried respiration, marked movement of the alæ nasi, and rapid pulse. I directed that the child be placed in a cold wet pack. The effect was marked; the restlessness disappeared at once, the respiration became tranquil and the child fell into a calm sleep. As soon as the pack became warm, the restlessness and hurried respiration returned, to disappear immediately upon the renewal of the pack, which was continued all night. At 9 A.M. the temperature in axilla was 101½° F. The baby had nursed twice in the night and had retained the milk. The diarrhea had ceased. The wet cloths were continued until noon. At 1 P.M. the temperature was normal, and the pack was discontinued. There was no return of the unfavorable manifestations. The child was discharged as well the next morning.

The two cases reported are undoubtedly cases of *heat-stroke* or *thermic fever*, recognized by a consideration of the symptomatology and comparison with the phenomena obtained in experimental investigations, and by the success of the therapeutic measures adopted. In experimental studies upon the effects of high temperatures in animals, a series of phenomena, progressively manifesting themselves as the temperature of the animals rose, was observed. These may be summed up in the order of their appearance: nausea; dyspnea and cardiac irregularity, with greatly increased rapidity of pulse; and heat rigidity. In the experiments made by Krishaber[1] upon himself he noted as a consequence of the rapid elevation of temperature: increased rapidity of heart's action (pulse rising from 75 to 160), headache, malaise, and nausea—phenomena like those observed in the experimental studies on animals. That the first case is one of heat-stroke will hardly be questioned, the array of symptoms pointing to this conclusion. We have the initiatory phenomena, the progression in gravity, until at the time when I saw the case the climax was reached; a state of asphyxia, due to the diminished exhalation of carbon dioxide and great destruction of oxygen, an effect observed by Litten in his experimental

[1] Litten: "Ueber die Einwirkung erhöhter Temperaturen auf den thierischen Organismus," Virchow's Archiv, Band 70; Naunyn: "Fieber und Kaltwasserbehandlung," Archiv für experiment. Patholog. u. Pharmacol., Band 18.

studies. In addition we note the occurrence of heat-rigidity in a limited number of muscles. The second case, although not so marked as the first, is, nevertheless, also one of heat-stroke. In this case we note the increase in the gravity of the phenomena running parallel with the exaltation of the temperature. We have the vomiting that ensued when anything was administered by the mouth or when the patient nursed; then the setting in of dyspnea, with the frequency of the respirations; the great rapidity of the heart's action, as indicated by the pulse; the great restlessness, due partly to the dyspnea and partly to the cerebral irritation, equivalent in the infant to the headache observed in the experimental study in adults. Taking both cases together, we have a striking clinical verification of the phenomena noted in the experimental studies, the second case presenting the phenomena as they gradually develop, and the first illustrating the climax.

Two symptoms recorded in the history of our cases, vomiting and diarrhea, are as yet unaccounted for, similar phenomena not being recorded in the experimental studies referred to. A moment's thought, however, will show that they have the same etiological relation as the other phenomena and that they form part of the history of heat-stroke. Nausea is a manifestation of high temperature; it is a short step from nausea to vomiting, especially in the infant that cannot speak and to whom food is tendered at varying intervals. As a result the food is immediately rejected. It is indeed so common a fact that infants vomit with any sudden and marked elevation of temperature that this point needs no further elucidation here. There is, however, further and more direct proof in the fact that in adults vomiting has been noted as one of the phenomena of heat-stroke.[1]

It is an established fact that with a febrile elevation of temperature the digestive power of the stomach is greatly depressed; this is especially true in the pathological state known as heat-stroke, in which even minor degrees of elevation of temperature provoke greater disturbances than the more marked elevations of fevers.[2] Part of the food in the infant's stomach passing undigested into the intestinal canal, there acts as an irritant, excites abnormal peristaltic movement and a diarrheal discharge results. In this connection another factor may be invoked, namely, stimulation of the vagus center. It has been experimentally demonstrated by Cyon that a sudden elevation of the temperature of the blood circulating in the brain (from 34 to 48° C.), by stimulation of the vagus center in the medulla,[3] causes slowing of the heart's action (from 23 to 5 in ten seconds).

The increased frequency of respiration observed with elevations of temperature, is also confirmatory of stimulation of the vagus center. It is probable that moderate elevation of temperature will have a more decided effect upon the very mobile and impressionable nervous system of the infant than in the case of an adult. It is well known that stimulation of the vagus excites peristaltic movements in the small intestines.[1] Now this stimulation of the vagus, alone or superadded to the irritation produced by undigested food, excites such rapid peristalsis as to give to the evacuations their diarrheal character. Taking the foregoing facts into consideration we are justified in considering the vomiting and diarrhea mentioned in the histories of the cases related as part of the symptomatology of heat-stroke.

CASE III. In the summer of 1885, I was called one night, at about 10 P.M., to see baby K., about one year old, bottle-fed. The family lived in a long one-story building, the front and larger part of which was used as a furniture store and the remainder as the living-rooms. The building was closed in on both sides and all the ventilation and fresh air was provided for by the front doors. During the afternoon the infant had been seized with vomiting, rejecting all that was given him. Later, he became restless, and would not lie in his cradle. It was a warm night. After a hasty examination I prescribed a mixture containing hydrate of chloral. The medicine was rejected each time it was administered. The child passed a restless night. On more careful examination it was found that as the child was held on its mother's arm it inclined its head toward the head and shoulder of the mother, as if its head were heavy and difficult to support. The head was hot to the touch; the eyes were dull; the face was pale; the axillary temperature was 103°; the pulse was about 130. Taking all the phenomena into consideration I concluded that I had a case of incipient brain trouble before me. It, however, occurred to me that perhaps the heat of the room might be responsible for the illness of the child. I therefore directed that cloths wrung out of ice-water be applied to the child's head and that after a few hours' steady application of the cold cloths upon the head, it be given every half-hour a teaspoonful of a mixture of equal parts of lime-water and milk; if this were well borne, then after four or five hours the dose was to be increased to two teaspoonfuls. On the next morning I found my little patient much better. The child appeared brighter, it held its head better, it did not vomit and had rested well during the night. The temperature was 101°, the pulse was much diminished in frequency. I directed the treatment to be continued, advised a slight increase in the quantity of milk and lime-water, but

[1] Quain's Dictionary of Medicine, article "Sunstroke."
[2] Naunyn, loc. cit.
[3] Ibid.

[1] Foster's Physiology, ed. 1880, p. 380.

positively forbade feeding with the bottle. On the following morning my patient was well, but weak. The baby had slept well during the night; in the morning it had taken its bottle well and with some avidity. Its temperature was normal and it held its head up well.

At the first glance it might appear that I had incorporated into this paper a case of beginning meningitis. It needs no elaborate elucidation, however, to demonstrate clearly that this is not so, and that the case properly belongs in the category under consideration. There was no prodromal history. The child was well until the day upon which I made my first visit. There is no history of convulsions, no history of twitching. There were no ocular phenomena, nor any drowsiness. In fact most of the symptoms of meningitis were wanting. There was, however, a history of sudden invasion, of vomiting of everything administered, of elevation of temperature, of great restlessness—symptoms that, taking the season and surroundings into consideration, all point to one morbid state, namely, heat-stroke.

It is true that the attitude of the child, a manifestation of the greatest importance in infantile symptomatology, seemed to point to the head as the seat of the morbid process, but the peculiar attitude is also one of the features of heat-stroke, even in its earlier stages. Obernier states that in heat-stroke, with a temperature of but 102° or 103° F., malaise, headache and rapid pulse are present.[1] Furthermore, it is probable that the greater prominence of the head symptoms was due to the reflection of heat from the ceiling upon the comparatively bare head of the infant, thus producing a greater degree of cerebral irritation than if the heat had been more equably distributed and its influence exerted upon the whole body.

Etiology.—As may be seen from the histories of the cases reported, nothing extraordinary occurred to which heat-stroke could be directly attributed. There was no undue exposure to the sun or to excessive artificial heat. There remains, therefore, as the sole etiological factor, the atmospheric heat of the surroundings, and the season, *i. e.*, the summer.

The surroundings of the little patients were such that the heat of a not excessively hot summer would readily suffice to give rise to thermic fever in infants, who are so very susceptible to the influence of heat. Case I. lived on the second floor of a two-story frame building, located in a narrow street at the foot of a hill with a tier of streets rising above it. The first floor was utilized as a bakery. Though the two rooms on the second floor were comparatively large, there was no ventilation; the windows of the front room opened on the narrow street, with much higher houses on the opposite side; the window of the rear room opened into a small court, with a large frame building at the further end, and beyond this there towered, one above the other, the houses on the tier of streets on the hill. The front room was divided from the rear room by a full partition-wall, communicating only by a narrow door, so that a free current of air was an impossibility. In the rear room all the cooking for the family and all the service requiring fire was done; the front room served as bedroom for father, mother, and four children. Owing to the narrowness of the street the front shutters had to be kept closed at night. To this must be superadded the location of the rooms—very near the roof (only separated from it by a small space)—and the heat created in the building by the bakery. In Case II. the family lived in a small back room of a tenement-house, with door and windows opening on a close court. This room was on the ground floor and served as a kitchen and bedroom for the mother and four children. Even on the hottest nights they were compelled to keep everything closed. That heat-stroke can occur in over-heated rooms is so well known and so well established that it needs no further proof here.[1]

Treatment.—After the labors of Jürgensen, Immermann, Liebermeister, and others, it would be a work of supererogation to enter into any long discussion as to the *rationale* and the propriety of hydriatric treatment of high temperature; if this be true of fever, in which the philosophy of its application is rather complicated,[2] it is certainly true of heat-stroke, in which the therapeutic indication is the rapid abstraction of heat. Naunyn thus clearly expresses himself on this point: "To avoid any misunderstanding upon this point I refer to it again and declare expressly and distinctly that in heat-stroke I regard the rapid cooling of the system with cold water an absolute necessity."[3] My manner of following out the indication for treatment has been given. The wet pack referred to was used as follows: a large muslin sheet was folded in its length and then in its breadth and wrung out of cold water; the naked child was wrapped in the sheet, placed in its bed or cradle and covered with a blanket. As soon as the sheet became warm, it was removed and replaced by another that had meanwhile been cooling in the water; this procedure was continued until the temperature reached the normal. I am so explicit on this point for the reason that my method of using the wet pack differs

[1] Naunyn, loc. cit., p. 59.

[1] Quain's Dictionary of Medicine, article "Sunstroke."

[2] Liebermeister, "Antipyr. Heilmethoden," Ziemssen's Handbuch der allg. Therapie, p. 15.

[3] Naunyn, loc. cit.

from that described by Winternitz[1] and by Liebermeister.[2] The method is easy of application. All who have had any experience with children know the difficulties attendant upon putting a sick child into a bath—and more especially a cold bath—the stratagems that must be resorted to, the struggles of the child in the bath, its cries—all certainly not beneficial to the little patient. In the wet pack the child is so comfortable, that it is only when the pack becomes warm that the child cries and shows any uneasiness. I believe that the wet pack as here described is a more powerful agent for the abstraction of heat than the cold bath. It is true that the cold bath produces a marked and rapid lowering of the temperature, but this effect is not permanent and after a longer or shorter period of time the temperature has again risen, frequently to its previous height. The cold bath must then be repeated.[3] The question that has presented itself to me is whether the shocks to the system consequent upon the use of the cold baths[4] may not have some deleterious action upon the organism. The wet pack does not produce so rapid a depression of the temperature, but, on the other hand, if applied as here detailed, it is not followed by a secondary elevation; the heat is abstracted gradually but continuously, and, in the time required for this gradual abstraction, the system has accommodated itself to the changed condition. In Cases I. and II., in which the temperature was very high and at a dangerous point, and in which as large and as rapid an abstraction of heat as possible was indicated, I applied the wet pack to the whole body. In Case III., however, in which the temperature was but 103° and no immediate danger threatened, I used only the limited pack, *i. e.*, a heavy towel folded three or four times, wrung out of ice-water and applied to a limited portion of the body—in this instance to the head. I believed that the chief source of trouble lay in the great heat reflected from the ceiling upon the head of the infant, and hence it appeared to me that the therapeutic indications, viz., an obviation of the cause and an abstraction of the heat already absorbed, would be accomplished by the limited wet pack upon the head. The result was all that could be desired. In the general wet pack I used only ordinary hydrant water; in the limited wet pack I resorted to ice-water, thereby greatly enhancing the refrigerant influence.

From all that has been said—from the careful study of the symptoms and a comparison of them with the phenomena produced in the experimental studies of the effects of heat, from a study of the etiological conditions and from the results obtained by the special treatment, I believe myself justified in claiming that "heat-stroke" or "thermic fever," as resulting from over-heated apartments, must be considered in the category of the summer diseases of infants. Though I have seen but the few cases here recorded, it cannot be doubted that many more have occurred and still do occur every summer in the large cities wherein a great part of the population dwells under conditions as unfavorable as, or even more so than, those referred to in the etiological section of this paper—for it certainly is not to be supposed that mine were the only cases that occurred; but they have hitherto remained unrecognized, being engulfed in that great vortex that is made to swallow so many things, to wit, cholera infantum.

The importance of recognizing the fact that heat-stroke is of more frequent occurrence than has hitherto been believed, and that it may be produced by the heat of apartments, is not to be underestimated—more especially as, from their symptomatology, these cases are apt to deceive. Cases I. and II. present many analogies to cases of cholera infantum. It is a fact that most cases of vomiting and diarrhea occurring in infants in the summer months are set down as cholera infantum. This accounts for my uncertainty as to the therapeutic measures to be resorted to in Case I., for, though this was a typical case of heat-stroke, my mind was so occupied with the previous history of vomiting and diarrhea that I looked upon it as a case of cholera infantum *in extremis*, in which nothing would avail, and had it not been for some previous experience with the wet pack I should not have dreamed of resorting to hydrotherapy. Although a careful study of the case afterward disclosed to me its true nature, when I encountered Cases II. and III. I was still in a state of uncertainty as to their true character.

Cases like the third are apt to be mistaken for cases of cerebral disorders. In fact, in West's *Diseases of Children*[1] we find a case of heat-stroke from exposure to the sun treated of under the head of cerebral congestion.

The recognition of the true character of these cases is therefore of vital importance, for upon the diagnosis will depend the correct and appropriate therapeutic measures to be resorted to. If correctly diagnosticated, appropriate measures (already indicated) will be instituted and crowned with success, even in desperate cases; if not, the patient may be dosed and medicated until death closes the scene.

[1] Winternitz, "Hydrotherap.," Ziemssen's Handbuch der allg. Therapie.

[2] Liebermeister, loc. cit. [3] Ibid.

[4] As this is not the place to go into this in detail, I will only refer to the rigors that accompany the elevation.

Mosetig-Moorhof has been selected to assume charge of the second surgical department of the Vienna General Hospital, formerly under the care of Salzer, deceased.

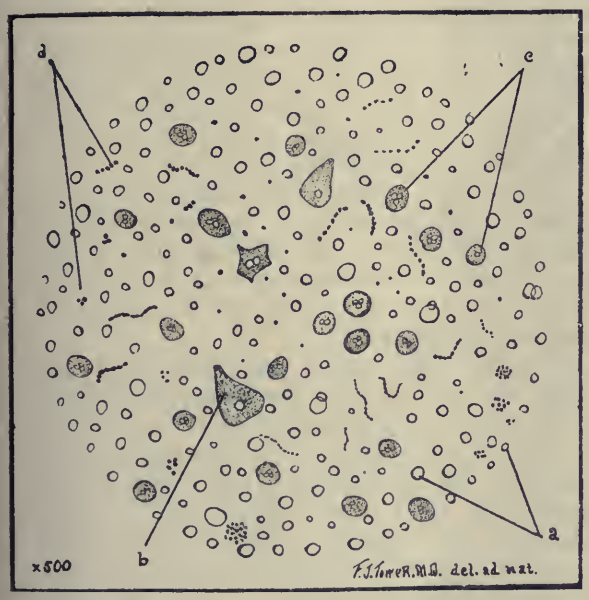
[1] West: Lectures on Dis. of Children. Philada., 1866, p. 48.

MILK INFECTION.

By F. J TOWER, M.D.,
of Milwaukee.

Considering that at least 7,000,000,000 gallons of milk are consumed in the United States alone, it seems a matter of more than little importance to appreciate the source of milk infection, especially when we find milk more ready than any other aliment to absorb poisonous substances and become a culture-bed for numerous germs and an undoubted carrier for such diseases as tuberculosis, anthrax, typhoid fever, diphtheria and scarlatina. How many cases even of tabes mesenterica and typhoid fever are caused by infected milk it is hard to say, but certainly a large per cent. can be traced to it. The origin of a late siege by an amœbic dysentery that one of the Eastern cities has had could undoubtedly be found in the adulteration of milk with water from a source contaminated with this amœba. Water from a stream upon which are situated distilleries, glue factories, wool-cleaning establishments, or which has sewers running into it, when drunk by cattle will infect the milk with many varieties of vegetable and animal life of a low form, and is very detrimental, not only when fed to infants and invalids, but causes diarrheas and gastric disturbances in healthy adults.

Fig. 1.



a. Milk globules. b. Epithelial cells. c. Pus-corpuscles. d. Cocci.

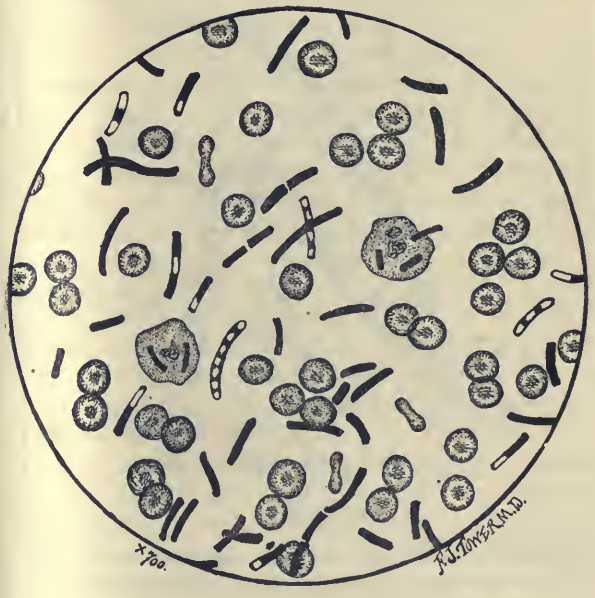
Varieties of Poisonous Milk.—1. Milk taken from a cow with garget, and allowed to stand for twenty-four hours, will on proper treatment and great care in manipulation, which is always necessary when treating for a ptomaïne, furnish an alkaloidal substance of which 0.01 gram injected subcutaneously in a rabbit will produce death in about sixteen hours. In Fig. 1 is seen the microscopical appearance of such milk, showing cocci, epithelial cells, pus-corpuscles and the milk-globules.

2. When adulterated with water into which the excrements of a typhoid fever case have found a way, the milk will give the Ehrlich diazo-reaction, which depends upon the formation of an anilin-red from the amine products of the bacillus typhosus. The destruction by disinfectants of the organisms in the feces does not necessarily render them innocuous, for the poisonous albuminoids still remain, and, administered with the milk in which they are found, produce a typhoid condition in animals.

3. Milk from a cow suffering with anthrax, taken in the quantity of 0.3 gram, and injected at the base of the tail of a mouse, will in two days kill the animal, and the blood will be found to teem with the bacillus anthracis. Fig. 2 shows a fresh cover-glass preparation of blood from a mouse killed by anthrax; the white corpuscles, of which two are seen, are entered by the bacilli.

4. The milk of an animal affected with any condition of debility or febrile disorder is viscid and will coagulate almost immediately on removal; it will be found to contain ammonium carbonate in very appreciable quantities, also several organisms, and appears under the microscope to resemble colostrum, which it is not, for a very small quantity of the milk added to fresh milk will produce a like condition. The reaction is very alkaline; the milk has a peculiar soapy taste, and the milk-globules are irregular in shape, the emulsion being poor.

Fig. 2.

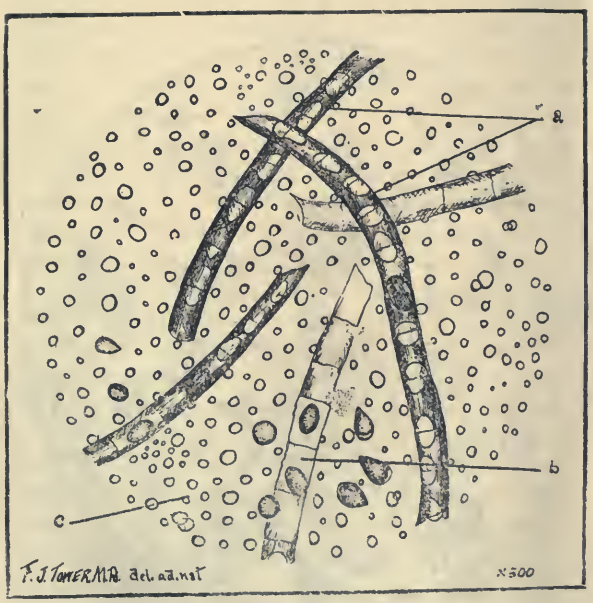


5. In milk which has stood in a damp place for twelve hours tyrotoxicon is found to such an extent

that many cases of poisoning are at present on record, and many more, in which the cause of death was only suspected, might have been traced to the presence of tyrotoxicon in food containing the milk. The cases of ice-cream and cheese-poisoning are in most cases due to the same agent. The frequent and even pardonable inability of the chemist to find the exact cause often leaves us at sea for a cause for the sickness or death, as oftentimes physiological experiments, and not chemical analysis, will determine for us the presence of the alkaloid. This tyrotoxicon is the product of several varieties of bacteria, as I have been unable to procure any pure culture from milk containing it. In warm weather, especially after much rain, and when the heat causes a slight vapor to arise from the ground of damp places, milk in a very few hours becomes poisonous. At such a time of the year, when infantile diarrhea is very prevalent, there is no doubt but that the milk in most cases contains the tyrotoxicon.

6. Among the coloring material used by dairymen to give skimmed milk a creamy appearance is a substance which is very frequently adulterated with red-lead, and the annatto (so called) becomes a poisonous substance, and quite unfit for use. One case of this kind has been reported. Saffron is also

FIG. 3.



a. Confervæ. b. Same, sporing. c. Milk-globules.

used as a coloring matter for milk, butter and cheese, but as the oil of saffron is not miscible there is slight danger from the effects of the ingested saffron.

7. Milk from a swill-fed cow I find to contain one of the confervæ, a low order of vegetable life—in fact, an alga. The fats are deficient, the milk is thin in consistency, and of a faint bluish tint, very much like skimmed milk. In Fig. 3 is shown a specimen of milk such as I describe.

8. In many milks there is found the oïdium lactis, which is a penicillium, and seems to exert a very detrimental influence upon young bottle-fed children. Whether it is the actual presence of the oïdium or the inferior quality of the milk that causes the disturbance, I have not demonstrated.

Colored Milk.—1. Blue milk has a very disagreeable taste, and when drunk will produce very severe gastritis and diarrhea. The bacillus cyaneus is the cause of the blue color. There are two varieties of blue milk—that which is blue when milked and that which becomes blue upon standing. The former is very slightly poisonous, while the latter is very much so. Both contain the bacillus, but the grade of toxicity is determined by the non-development of one and the maturity of the other.

2. Yellow milk. Beside coloring matter introduced by the dairyman to make the milk appear richer, there is found a bacterium xanthinum, and also a vibrio xanthogenus, which are found in a pure culture on glycerin-agar and on nutrient gelatin to produce a yellow film; the bacterium is aërobic, so that the lower portions of the milk are apt to be free from the growing organisms, though it will contain the products and may even be more deleterious in its effects than the upper stratum. The eating of rheum palmatum or some of the orchids will give milk a yellow color. I have found a penicillium the spores of which are yellow growing on milk left for a few days exposed in dry places to the atmosphere, giving an appearance of grated lemon-peel upon the surface of the milk.

3. Red milk usually comes from feeding the animal madder or galium (called also bedstraw). The spirillum rubrum will grow on milk, though there are no cases describing such a condition. At rare times blood finds its way into milk, and gives it a reddish hue.

4. Brown milk. Among many experiments made during the past year I find that on exposing milk to the air of certain localities a fungus will occasionally be captured, the products of which are brown, which extending into the surrounding milk give it a rusty-brown color. The spore-growth of this one of the fungi presents no difference from that of the oïdium lactis. It thrives better when a small per cent. of cane sugar has been added.

5. Green milk is very rare. It may possibly arise, under some circumstances, in ulcer of the udder, from the presence of the same organism which causes green pus, though I have not seen such a condition. Green milk as it does actually occur is due to two causes, one a physical cause and the other organismal. From the first: a very large amount of fat is found, so that the emulsion is poor, and the fat in

masses throughout the milk gives it a greenish tinge. From the other: when the causes of blue and yellow milk are both active in the same milk, this appears green in color; the result is a mixed culture divisible into the two distinct varieties.

Odors, etc., of Milk.—The natural odor of milk is due to a minute proportion of H_2S, which rapidly leaves it, and we fail to get the faint animal smell. Owing to the presence of the albuminoid substances, *i. e.*, casein, sodium albuminate, etc., there is great liability to fermentation and to absorption of odors from its surroundings. When a quantity of milk is left exposed to any noxious gas, it becomes contaminated within a very short space of time.

The normal amphioteric reaction of milk well suits it as a medium for the growth of low forms of vegetable life. Take the torula, for instance—though cane sugar is necessary for its growth. In milk to which saccharose has been added, the yeast-plant finds a feeding-ground, and breaks up each molecule of grape sugar, into which probably the cane sugar has first been changed by a simple hydration—

$$C_{12}H_{22}O_{11} + H_2O = 2C_6H_{12}O_6$$
$$C_6H_{12}O_6 = 2C_2H_5HO + 2CO_2$$

the carbonic dioxide rising in bubbles and the alcohol remaining in solution in the milk. Upon this property of yeast is founded the manner of koumyss-manufacture.

If the clostridium butyricus finds an entrance into milk it changes the lactic to butyric acid, and the milk then has the faint pineapple odor of that acid. This may occur when milk is even sealed up from the air, provided the clostridium gains an entrance to the milk before sealing, for the organism is an anaërobic bacterium, and does not need oxygen for its growth.

When the cow suffers from any disease of the liver that prevents proper elimination of the bile-acids and salts, the milk will be exceedingly bitter. There is no difference between the taste of such milk and that which comes from the cow after the ingestion of leaves of the chestnut tree. When even a small quantity of the plant symplocarpus fœtidus is eaten, the milk has an odor quite equal to mephitus itself; not so bad, but still sufficient for those who dislike onions, is the odor when any of the allia are eaten. Turnips fed to cows impart their taste to the lacteal fluid.

A few words upon the vitality of the commoner growths in milk will not be out of place in this sketch. When the alcohol in milk undergoing yeast-fermentation reaches about 6 per cent. the growth ceases—is, in fact, destroyed by its own production. This is true in all cases, but in some it takes a much longer time for the growth to exhaust itself, as it may be slow or the organism a particularly resistant one. Organisms, if left to themselves, die or cease to grow from one of two reasons: one, when they exhaust the material in the pabulum favorable to their growth and propagation; and, secondly, when they produce a substance poisonous to not only many higher grades of life, but to themselves, as, when the torulæ produce alcohol, or the tubercle bacilli an alkaloidal substance. The vitality of the tubercle bacillus is far greater than that of any other microörganism commonly found in milk, some of which containing the bacilli may be boiled for four minutes, and if an inoculation be then made upon sterilized blood-serum, the growth, though somewhat tardy, will take place. The gastric juice does not destroy them. For a fluid medium a spit-culture is one of the best to make. Milk should always be boiled for thirty minutes, bottled, and then allowed to cool, and there will be no danger in using it. The spores of the tubercle bacillus may even be demonstrated by successive cultures though not seen in the specimen, for they do not stain in milk that contains them. Milk that has been treated with carbolic acid for fifteen hours will make successful cultures; not until from eighteen to twenty hours will the bacilli be destroyed. As a comparison of vitality the cultures of staphylococcus aureus are checked by a 1 to 30,000 iodine solution, while moist heat (100° C.), the best of all sterilizers, fails to destroy the tubercle bacillus in several minutes.

Now to descend upon a more practical footing, where our remarks will apply to everyday protection. Always suppose that every milk is dangerous to health as it is freshly received; boil for thirty minutes, ascertain that it contains no fungoid growths, has a specific gravity of about 1.033, contains 3 per cent. or more of fats, and approximately 4 per cent. each of lactose and albuminoids (casein, etc.).

RARE COMPLICATIONS OF TYPHOID FEVER.

By EDWIN E. GRAHAM, M.D.,
CHIEF CLINICAL ASSISTANT OF MEDICINE IN JEFFERSON MEDICAL COLLEGE; PHYSICIAN TO FRANKLIN REFORMATORY HOME.

The publication of an exhaustive article on "Rare Complications of Typhoid Fever," by Professor H. A. Hare and Mr. Arthur J. Patek, in The Medical News of June 20, 1891, in which they report two cases of typhoid fever that were ushered in by mania, induces me to report the following case that occurred in the practice of my brother, Dr. James Graham. In this instance I am of the opinion that the typhoid fever ushered in the mania, the tendency to insanity having previously existed.

Dr. Hare and Mr. Patek clearly show that, in a disease as common as typhoid fever, mania coming

on early is an exceedingly rare complication. Might it not be that in some of the cases cited the typhoid fever was the complication, for they were mostly hospital cases, and in hospital practice the patient is apt to be a stranger, ignorant of his hereditary tendencies, or, as appears to be common to all classes, conceals insanity in his family as he would crime.

I was called June 12, 1891, to see for the first time John T., aged twenty-two years. He was lying upon a settee on the first floor, and his mother, an exceedingly nervous woman, was bathing his head. She informed me that her son imagined himself "under a spell," put upon him by the young lady to whom he was engaged to be married. He was of temperate habits, had been in good health, and at work as an employé in a store until two days previously. When upon returning home after spending the evening with some friends, but unattended with any excitement, "he had acted queerly," would not answer questions, but said that "the spell was upon him." He immediately informed me that some girl had cast "a spell upon him," but upon being questioned he remained quiet, with his eyes intently fixed on the ceiling, and did not answer or appear to hear me. His skin felt cool, and his pulse was but slightly increased in frequency. The mother reluctantly admitted that his father had been insane, and had been confined in an asylum, but knew of no other member of her own or of her husband's family who had shown any evidence of insanity. The patient was her only child.

The case appeared to be evidently one of insanity, and I advised that he be closely watched for a short time, and if no signs of improvement were shown to send him to an asylum. I was again called the following day, and, although awake and evidently conscious, he paid no attention to my questions. His mother reported that he had been excitable through the night, and that he was constipated. I ordered fluid extract of cascara sagrada. Two days later I was again summoned to see him, as he had escaped in the night while his mother was temporarily absent, and was found the next day in the station-house, where he had been locked up by the police on a suspicion of robbery, as when arrested he had a clock and some articles of female attire in his arms. Upon attempting to undress him when he arrived home his struggles were such that it required four men to control him. I did not see him until four days later—a week after my first visit. His mother, who was now quite frightened and exhausted, earnestly requested that he be transferred to an asylum. She reported that he had on several occasions been extremely violent, that four men had with difficulty been able to control him, and it had been necessary to tie him in the bed. He had also entered a neighbor's dwelling, where he heard some singing, with the intention of "clearing out the house," and was only restrained by the persuasion of another neighbor, whom he called "the Virgin." My visit had the same negative results. Accordingly the necessary papers testifying to his insanity were filled out by myself and another physician—one of large experience. Four days later I was called upon for a death certificate, but suspecting that he had committed suicide I referred the family to the coroner, and the coroner's physician, on post-mortem examination, found that he died from typhoid fever.

It was unfortunate that I had not taken his temperature, or made any notes as to his physical condition. But his temperature had seemed normal, and the case appeared to be evidently one of uncomplicated insanity. It was also difficult to get any accurate information.

The following case presents another complication that may arise during the course of enteric fever, *i. e.*, hemorrhage:

Gracie M., eight years old, died January 21, 1891, of typhoid fever, on the twenty-fourth day, apparently from exhaustion. Two sisters were taken down with the disease about the same time. Gracie had a slight initial epistaxis, and from the ninth to the thirteenth day slight, almost constant, oozing of blood from the nose, and also from the mouth, eyes, ears, vagina and anus, although these hemorrhages were less in amount, and less constant. There was no heart or kidney complication, and no history of hemophilia in the family. The bleeding did not seem to influence the course of the disease. The other child, three years older, had a milder attack and recovered. Previous to this illness Gracie had always been a strong, healthy child.

In looking over the literature of the subject I can find no case in which the hemorrhage was of such a universal character as in the case here reported. W. W. Powell[1] reports a case of severe hemoptysis in enteric fever ending in recovery, and not followed by any signs of disease of the lungs, either tuberculous or otherwise. William Madden,[2] in an elaborate discussion on the complications and sequelæ of typhoid fever, devotes only a few lines to hemorrhages from other portions of the body than the bowel, and says: "Hemorrhage in children is not so frequent as in adults, because of the superficial character of the intestinal ulcerations in the very young." Parrot relates the case of a child three years old that died from a sudden intestinal hemorrhage. He says: "Epistaxis is as rare in children as it is frequent in adults; occasionally it is profuse." Uterine hemorrhage is not uncommon. According to Beach:[3] "Phlebitis, arteritis, endocarditis, pericarditis, thrombosis and infarctions with their results, have been observed as occurring in connection with typhoid fever." Some of these conditions may be either complications or sequelæ, and may arise from the action of the specific poison on the endothelium, the condition of the blood or lymph, the state of the circulation, or from external pressure.

[1] Westminster Hosp. Rep., London, 1890, vi. 93.
[2] Brooklyn Medical Journal, 1889, pp. 749–756.
[3] Trans. N. Y. State Medical Society, 1889.

CASES OF GASTRIC ULCER CURED BY A DIET OF ICE-CREAM.

Clinic of Prof. J. M. Da Costa.

Reported by E. P. HERSHEY, M.D.,
of Denver, Col.

Case I.—In September, 1888, A. E. L., thirty-five years of age, unmarried, presented herself at the clinic. Three months previously the patient had applied for the treatment of what she considered aggravated dyspepsia. The symptoms then were localized pain in the epigastric region, more intense on pressure. The corsets had to be put aside, and later on the parts became so sensitive that the front of the dress could not be fastened. At first, food was rejected about from twenty to thirty minutes after it had been taken into the stomach; but later on, it was expelled at once. Blood appeared in the vomited matter—indeed on one occasion there was distinct hematemesis. Some weeks previously to her visit to the clinic, the patient had eaten a small quantity of ice-cream, and to the surprise of all, it was retained by the stomach. After this she constantly expressed a desire to have an unlimited quantity of this agreeable nourishment, but owing to the fears of the attending physician as to its possibly injurious effect, she was allowed but a little.

At the time when she applied at the clinic she complained of continuous pain extending from the epigastric region in front, to a point between the first lumbar and the last dorsal vertebra; the slightest pressure over either of these regions was unbearable. During the first three months of her illness, she had lost twenty-five pounds in weight. Every article suggested as a means of diet was met by the answer that it had already been tried. It was advised that the patient be given iced milk with thirty drops of the aromatic spirits of ammonia to the glassful; should this fail, rectal alimentation to be resorted to. Ten days later it was reported that the patient rejected the medicated milk, and that all artificially digested foods given per rectum were spasmodically expelled; so this means of nourishment had to be discontinued. At the suggestion of Prof. Da Costa, the patient was then allowed ice-cream *ad libitum*. No attempt at medication was made, as every drug, whether given in capsule or liquid, was vomited as soon as it reached the stomach. The occasional severe paroxysms of pain were relieved by hypodermatic injections of morphia.

After the patient was allowed her choice of diet, all severe symptoms gradually began to disappear. From two to three quarts of ice-cream were at times eaten during the twenty-four hours, the smallest quantity taken on any day having been one quart. At the end of two months, the patient had gained twenty-four pounds in weight; all severe symptoms had disappeared, and solid nourishment was gradually added to the diet, until the patient made a complete recovery.

Case II.—One year later, another patient, M. H., a laborer, presented himself at the clinic with the same history as the case reported, except in severity, the gastric irritability being very great. He had some weeks before discovered that the only food that he could retain was ice-cream. This article he was urged to continue, which he did for about a month, when the improvement was so great that he was put on a carefully selected diet of solid food. He also made a complete recovery. In this instance, however, medicine was tolerated, and he was given one-quarter grain doses of the nitrate of silver three times a day.

To these cases appearing at the clinic, the following, which happened in the practice of the reporter, may be added:

Case III.—In August, of last year, a young lady came under observation with symptoms of severe pain in the epigastrium, extending as low down as the umbilicus, and throughout the left hypochondrium. There was a history of constant distress in the stomach for one year, and food was rejected as soon as it entered the stomach. Hematemesis was of frequent occurrence, and the taking of food always occasioned distressing pains. For three weeks previously to the time the case was first seen the patient had attempted to take no food other than milk and lime-water, and even this was frequently vomited. She was confined to her bed; there was decided tenderness upon slight pressure throughout the region of pain; the knees were drawn up. The temperature was 103°, the pulse 130, and weak. The ulcer had perforated the walls of the stomach, and localized peritonitis had followed. The stomach was at once put to rest; rectal alimentation was resorted to, including principally peptonized milk and beef peptonoids. Hot turpentine stupes were applied to the affected area, and opium was administered by the bowel until slight narcosis was produced. In four days all signs of peritonitis had disappeared. Upon the fifth day an attempt was made to give nourishment by the mouth. The patient was given peptonized milk, but this occasioned severe pain and vomiting and had to be discontinued. Acting then upon the experience gained from the cases reported, the patient was given a small quantity of ice-cream, pure and freshly made; this she retained, and on this diet she was kept for nearly two months, gaining rapidly in strength. The particular advantage of the diet was that it neither nauseated nor distressed her. During the third month, solid food was gradually added, until a plain substantial diet could be indulged in without distress. Following this condition, there were marked symptoms of gastric catarrh, which were greatly lessened by means of lavage.

It is most likely that the ice-cream in these cases acted partly in virtue of the cold, which, as a local anesthetic, benumbs the stomach, permitting the act of digestion to go on without pain, and the nourishment to be appropriated. In using ice-cream as a diet in cases of gastric ulcer, too great care cannot be taken in seeing that the article is perfectly fresh, and contains no corn-starch or other ingredients to thicken it. That which is over twenty-four hours old should not be used. Ice-cream may

not answer in all cases, but it will be found a most excellent article of food to resort to when other foods cannot be retained. It is a conceded fact that many cases of gastric ulcer get well of themselves, provided the stomach be kept at rest. If, then, an article of diet be given which will allow of the desired rest, and at the same time nourish the patient, we have the best means of bringing about a speedy recovery. By the presence of some food in the stomach we prevent the continued corrosive action of the gastric juice upon the affected surface, a fact that certainly should be taken into consideration when the plan of rectal alimentation is entertained.

The only objection that could be taken to this form of diet is in the risk of giving impure ice-cream. There is undoubtedly danger in the hot summer months. All such risk, however, may be obviated by allowing only that to be eaten which has been made at home.

A FATAL CASE OF PURPURA HÆMORRHAGICA.

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PHYSICIAN TO THE EPISCOPAL HOSPITAL, PHILADELPHIA.

THE extreme rarity of rapidly fatal forms of purpura among adults, and the unusual character of the following case, are sufficient explanation for placing it upon record:

M. H., a healthy male, of splendid physique, twenty-one years old, living amid good hygienic surroundings, and of good family history, was admitted to the Episcopal Hospital on April 3, 1889. He had always enjoyed good health until his present illness, excepting an attack of typhoid fever nine years, and of gonorrhea four months, before admission. The illness on account of which he sought admission began March 29th, after exposure to cold and wet (to which he ascribed his illness), with sore throat, general malaise and aching of the bones, followed in two days by swelling in one finger, and, on April 1st, by pain and swelling of the ankle- and knee-joints; at the same time purpuric spots were noticed on the feet and legs. The symptoms progressed until his admission, when he presented the following appearance: Both ankles, the left knee, both wrists, the left elbow, and the right shoulder were swollen, painful and edematous, some more so than others; on the anterior aspect of both legs, on the forehead and about the alæ nasi were numerous purpuric spots, varying in size from a split pea to the nail of one's little finger. Similar spots, though larger, were noticed on the buttocks and left hip. These spots were dark-purplish in color, the larger ones slightly elevated above, the smaller ones on a level with, the surrounding skin. The left tonsil was much swollen, dark-blue in color, and the seat of great pain; the tongue was moist and clear; the bowels were constipated; there was some nausea; the temperature was 99°; the pulse was 100. On the next day, April 4th, the hemorrhagic spots were much increased in size, especially those on the buttocks and hip-joint. This joint was swollen and edematous, painful on pressure, and presented on its outer surface a large extravasation of the size of a man's hand, while new spots and patches had appeared on the arms, abdomen and left eyelid, which was edematous and dark-blue in color. The enlargement and discoloration of the left tonsil had diminished, but a bluish patch was noticed on the uvula and posterior portion of the hard palate. The patient complained of much pain in the throat. His general condition continued good. The morning temperature was 99°, the pulse 92; the evening temperature 100.4°, the pulse 96. On the 5th the left eye was completely covered by the edematous and blackened lid; a similar process was beginning on the right. The right shoulder was twice its natural size, edematous, and covered by a large extravasation that extended up the neck almost to the ear, the area involved being of the size of *two hands*. On the right arm, midway between the shoulder and the elbow, was another smaller hemorrhagic patch, fully three inches in its greatest diameter. The other joints had diminished in size and were free from pain, while the purpuric areas about them and on the lower extremities and abdomen were undergoing the changes peculiar to subcutaneous extravasations of blood. The morning temperature was 99.6°, the pulse 96; the evening temperature 100°, the pulse 102. By noon, April 6th, the tongue was attacked and rapidly filled up the oral cavity, rendering swallowing almost impossible; its surface was livid, almost black, a large hemorrhagic patch, accompanied by swelling and edema, appeared just below the lower lip, and extended over the chin to the hyoid bone. The front of the neck was much swollen, the swelling adding to the difficulty in swallowing already caused by the condition of the tongue. The other extravasations and swellings were rapidly subsiding. The patches on the right shoulder and arm, however, had become depressed below the surface, and of a deep-black color. An enema brought away a copious tarry stool. The patient was weak and anemic-looking. The morning temperature was 100.6°, the pulse 108; the the evening temperature 101°, the pulse 106. On April 7th the swelling of the tongue had subsided sufficiently to permit of some swallowing. The neck had also diminished in size. New spots were seen on the chest and back. The joint and other swellings had completely subsided, leaving nothing but the fading extravasations. The urine, previously clear, was now dark and smoky; it was, unfortunately, not examined. Slight cough was present, with blood-stained sputa. Numerous subcrepitant râles were heard over the bases of both lungs. Morning temperature was 101.2°, the pulse 108; the evening temperature 101.6°, the pulse 108. On the morning of April 8th, the tenth day of the disease and the eighth of the eruption, the patient was very weak. He expectorated abundant frothy, bloody sputa; the breathing was accelerated to 36 per minute; there was percussion dulness over the left base, where bronchial breathing and subcrepitant

râles were heard; elsewhere, throughout both lungs, there were large bubbling râles. The urine was darker, and contained a few clots. The extravasations on the right shoulder and arm were still depressed below the surface, *and presented the dry and shrivelled appearance of a part about to become gangrenous*—an indication that gangrene would, without doubt, have supervened had death been deferred a little longer. The morning temperature and pulse were 101.8° and 120 respectively. The dyspnea and the signs of pulmonary congestion and edema increased until death occurred at 6 P.M. Just before the end the temperature registered 103.2°, pulse 140. An autopsy was not permitted.

As to the treatment there is little to be said. At first, owing to the prominence of the joint symptoms, sodium salicylate was administered. On April 4th, when the true nature of the disease became apparent, the salicylate was discontinued, and half a drachm of fluid extract of ergot and twenty minims of the tincture of the chloride of iron, every three hours, were substituted. When symptoms of adynamia set in whiskey was added. Morphia, subcutaneously, was also given for the very intense joint pains. Upon the onset of the pulmonary symptoms the chest was frequently dry-cupped. The diet consisted of milk and meat-broths. But it is probable that, in a disease of so malignant a character, treatment of any sort would have been futile, and a report of the treatment is only added to complete the clinical history.

What was the nature of this almost fulminant attack? In the present obscurity and uncertainty surrounding the pathology and etiology of purpura, it is useless to speculate concerning the cause of the striking symptoms just narrated. Recent investigations point to a mycotic origin—either a direct action of microörganisms or the development of a poison by their growth. The impression made upon the writer as he saw this robust man sink under the external and internal hemorrhages, was the strong resemblance of the attack to the hemorrhagic form of the acute infectious diseases. So far there has been little that is convincing in the work of the advocates of the infectious nature of purpura. The researches of Martin de Gimard,[1] however, are more conclusive. This investigator has found micrococci in the blood of purpuric patients during life, and in the hemorrhagic patches and viscera after death. Injections of fresh blood taken from living purpuric patients into the bodies of rabbits failed to cause hemorrhages, but pure cultures in bouillon and agar-gelatin preparations injected into the cellular tissue, the peritoneum, and the veins of the ear of rabbits and of guinea-pigs gave rise to ecchymoses of the thigh and to hemorrhagic infiltrations in the peritoneum, in the capsule of the kidney, and in the small intestines. He ascribes the purpuric lesions to a mechanical obstruction of the vessels and to inflammation of their walls from the presence of colonies of micrococci, rupture occurring spontaneously, or as a result of movements on the part of the patient. The Medical News of May 23, 1891, contains an abstract of a paper by Letzerich, in which the disease is also etiologically ascribed to a microörganism, but the author does not appear, like Gimard, to have produced hemorrhages in animals. Whether or not purpura is really of microbic origin future investigation only will determine, but to the writer it seems the most likely explanation of the remarkable case reported in this paper.

[1] Du Purpura Hémorrhagique Primitif. Paris, 1888.

CLINICAL MEMORANDA.

TREATMENT OF SPINA BIFIDA.

By E. P. HURD, M.D.,
of Newburyport, Mass.

On reading an article published in The Medical News of May 16, 1891, by Dr. Ira K. Gardner, on "Excision of Spina Bifida," I was impressed by the fatal neglect of the operator to tie the neck of the sac before closing up the wound with sutures. Had that precaution been taken, I believe that the life of the little patient might have been saved. I speak from experience, having had a similar case in 1889, where, but for the interference of my friend, Dr. G. W. Jones, of Cambridgeport, I should have operated in the same manner as Dr. Gardner and his partner. Dr. Jones insisted on the necessity, before excision of the sac, of putting a firm chromicized catgut ligature around the neck, without which there would certainly be persistent and ultimately fatal escape of the cerebro-spinal fluid, which no amount of sutures of the integument, adhesive strips, and pressure could prevent. The operation was done as Dr. Jones suggested and the child is to-day in perfect health.

This case was reported by me in the *Therapeutic Gazette* for October, 1889, in an article with the heading "Operative Treatment of Spina Bifida." This article has received the commendation of distinguished surgeons, among whom I may mention Dr. Robert Abbe, of New York, who writes me: "Your operation, which is essentially Mayo Robson's, is the only safe one."

I will quote from this article that portion describing the operation as performed by Dr. G. W. Jones and myself:

"Wednesday, September 11. Ether was administered and the operation was performed under thorough antiseptic precautions. Once during the operation it was necessary to rally the failing heart by a hypodermatic injection of ether. An incision was made over the tumor, freely exposing the inside of the sac; the cavity was sponged out with a sublimate solution (1:2000). The glistening sac, with its arborescent nerve-filaments and median-core, was dissected or torn from its subjacent tissues till we had the entire membrane in our hands down to the foramen of entrance into the vertebral canal. Behind the neck of the sac (and by this term I mean the constricted portion before mentioned where the sac passed up into the spinal canal) was a large pulsating artery, which was carefully avoided. A stout catgut ligature

(that had previously been well chromicized to make it more enduring) was passed around the neck of the sac and twice firmly tied and the entire sac was then excised; iodoform was freely dusted over the raw surfaces, and a continuous (buried) fine catgut suture was taken, attaching the deep layer of the skin in front to the fascia, which had constituted the posterior boundary of the sac; this running *blind* stitch was entered from above and below until it finally ended in the edges of the cutaneous flaps, which were also brought together by a buried catgut suture (blind stitched); iodoform was applied once more and the line of incision finally closed in with flexible collodion. A compress and bandage completed the operation."

It will be seen that the above was strictly a hernia operation, performed according to Marcy's methods, as described in his recent treatise on *The Radical Cure of Hernia*. The sac with its contents originally belonged to the spinal canal, and had become a hernia by protrusion through a weak place in the last lumbar arch. The foramen of exit corresponded to the abdominal ring, which gives passage to intestinal hernia.

The ligation of the sac by chromicized catgut is according to Marcy's plan of dealing with the sac of abdominal hernia, and the stitching of the deep and superficial parts together by a running catgut thread and the final closure of the cutaneous incision with catgut and collodion are also like the abdominal operation.

CANCER OF THE BREAST CURED BY OPERATION.

BY WILLIAM M. LEWIS, M.D.,
OF GREENSBURG, KY.

IN the autumn of 1885 Mrs. S. B., fifty-one years of age, was examined for a "lump in her breast." Her health had always been good and she was the mother of eight healthy children, all grown. Her family history was somewhat alarming, as her father died of cancer of the stomach, and an aunt died of mammary scirrhus. The patient had noticed the growth about six months before, when it was the size of a walnut. She sought medical aid on account of the rapidity of the growth. It was found to be as large as a double fist, occupying the outer segment of the gland. The nipple was retracted and the axillary glands were enlarged and slightly tender; the tumor was freely movable, but attached to the skin beneath and to the outside of the nipple, and over this portion of the gland enlarged tortuous veins were plainly visible.

The diagnosis of carcinoma was made and soon after confirmed by Dr. David W. Yandell, of Louisville, Ky. Early removal was advised, and on November 12, 1885, with the assistance of Drs. Hazlewood, Buchanan and E. J. Graham, the entire diseased gland was removed. The incisions were well away from the mass, in healthy skin and tissue, and all the axillary glands were carefully removed. A drainage hole was made at the most dependent part, and the wound brought partly together with silk sutures. Moderate pressure was applied. Healing was by very profuse suppuration. The space from which the gland was removed granulated from the very bottom. Recovery was uninterrupted, and the lady's health has continued good all the time.

Now, nearly six years from the date of the operation, a very careful examination fails to elicit a single symptom of return of the neoplasm in or near the cicatrix, or elsewhere.

This case is reported for its value in a statistical point of view, and it proves that, under favorable circumstances, cancer of the breast is curable by excision. For the benefit of those who may doubt the diagnosis I desire to add that on section the tumor exuded a milky juice, and under the microscope the characteristic stroma and cells of the scirrhus variety of carcinoma were plainly seen.

A VERY IRREGULAR FOREIGN BODY IN THE ALIMENTARY TRACT SAFELY VOIDED UNDER THE "POTATO" TREATMENT.

BY J. SOLIS-COHEN, M.D.,
HONORARY PROFESSOR OF LARYNGOLOGY IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

A PATIENT was recently brought to me some two hours after having swallowed the irregularly shaped dental clasp depicted full size in the figure.

Exploration of the esophagus showed that tube to be unobstructed. The patient was ordered to feed exclusively upon buttered mashed and roasted potatoes, and to examine his stools carefully for the foreign body. Within forty-eight hours the patient left the object at my office door. It had been voided thoroughly coated with potato, to free it from which several washings had been required.

NOTE.—Had this very irregular body been found impacted in the esophagus, the same treatment would have been pursued in preference to the infliction of injury upon the esophagus in efforts at forcible extraction.

MEDICAL PROGRESS.

The Detection of Arsenic in Wall-paper.—A piece of the suspected paper is placed in strong aqua ammoniac. If arsenic be present a bluish color is developed. The presence of copper would give a similar reaction. If, however, a crystal of nitrate of silver be moistened with the fluid, the presence of arsenic is revealed by the development of a yellow color.—*National Druggist*, May 15, 1891.

Stain for the Medullary Sheaths of Nerves.—WEIGERT (*Münchener medicin. Wochenschr.*, June 16, 1891) has recently modified his method of staining the medullary sheaths of the nerves in such a way as to obviate the chromate of copper precipitate that is so injurious to the knife, and so that a differentiation by the method of Pal, with the danger of entirely decolorizing fine fibres, is not necessary. The hardened tissue is placed in equal parts of a cold, saturated and filtered solution of acetate of copper and a 10 per cent. solution of Rochelle salts, and kept for twenty-four hours in a thermo-

stat, then for twenty-four hours more in the solution of copper. The sections may now be stained without the necessity of differentiation. The staining fluid should be strongly alkaline—seven c.cm. of carbonate of lithium solution, instead of one c.cm. The mixture of the alcoholic solution of hematoxylon and the solution of carbonate of lithium must always be freshly prepared. After the sections have been stained for several hours in the thermostat the fibres appear blue; after a longer period the fibres appear black; the background is pale-rose. If the stain should be too deep, decolorization can be done as in the earlier method. In series-sections a blue tint imparted to the celloidin can be removed by a dilute solution of acetic acid. Anilin-oil-xylol (2:1) is recommended for clearing up.

When to Discontinue Mechanical Treatment in Hip-joint Disease.—At a meeting of the Section on Orthopedic Surgery of the New York Academy of Medicine, Dr. Newton M. Shaffer called attention to the difficulty which often existed in deciding when to discontinue mechanical treatment in hip-joint disease. The following conditions contra-indicated the removal of the apparatus: If manual concussion produces pain or flinching; if there is considerable deformity without ankylosis; if there is a true joint-limp, or if there are abscesses or sinuses connected with the joint; or if there is a true reflex muscular spasm, limiting movement slightly in all directions; if there is almost perfect flexion, with the other movements considerably or markedly limited; if flexion, abduction and adduction are excellent, with rotation and extension limited; and, finally, if all the movements are almost normal, except rotation inward during flexion (the limitations being due to the neuromuscular protection).

The Pathology of Diabetes Mellitus.—At the Tenth Congress for Internal Medicine, at Wiesbaden, Sandmeyer (*Deutsche medicin. Wochenschr.*, June 18, 1891) reported a fatal case of diabetes in a boy nine years old. The disease was first recognized at seven years of age. In the terminal coma, diacetic and oxybutyric acids were found in the urine. The urine contained but a trace of albumin, but many casts. A history of syphilis and an hereditary predisposition to diabetes were excluded. The autopsy was made seven hours after death. The pancreas was carefully examined, but no changes were found. The floor of the fourth ventricle was normal. Microscopically, the kidney presented evidences of glycogenic degeneration and characteristic fatty degeneration of its epithelium. The heart was involved in fatty degeneration.

Sterility in the Adipose.—Kisch (*Wiener Medizin Presse*, No. 21, 1891) has observed, both in man and in animals, that the adipose are especially prone to be sterile. This he ascribes to physical difficulties in the way of a perfect execution of the sexual act, to deficiency in number and virility of spermatozoids in the seminal fluid on the part of the male, to menstrual derangements on the part of the female and to diminished sexual desire on the part of both male and female. The prognosis is not unfavorable, if a rational therapeusis be instituted, directed to a reduction of the excessive deposit of fat, and to a removal of local pathological conditions in the genito-urinary tract.

Senile Chorea.—A woman, seventy years old, was admitted into King's College Hospital, London, under the care of Dr. Ferrier, with typical choreic movements of the right side of the body, face, arm and leg. She passed a sleepless night, and on the following day became maniacal. Under treatment with chloral, bromide, quinine and arsenic, recovery ultimately took place. The patient had no history of acute rheumatism, nor was there a family history of either rheumatism or chorea. The patient, herself, had eleven months previously had an attack of left-sided chorea that came on gradually and lasted two months.—*Lancet*, June 20, 1891.

Acute Hypertrophy of the Mammary Glands.—Crofford (*American Journal of Obstetrics*, June, 1891) reports the case of a girl, fifteen years old, in whom the breasts attained such proportions that, other means failing, amputation was performed. When removed, the right breast weighed thirteen pounds, the left eleven and a half. The tumors appeared to have been nourished by the superficial rather than by the deep vessels. Microscopically, the condition was found to have been an acute diffuse hypertrophy or fibro-adenoma.

Classification of Mental Disease.—Dornblüth (*Münchener med. Wochenschr.*, June 2, 1891) makes the following classification of the primary forms of mental disease: (1) Melancholia; (2) mania; (3) acute insanity (*verwirrtheit*); (4) acute dementia; (5) paranoia; (6) periodical insanity; (7) neurasthenic insanity; (8) hysterical insanity; (9) hypochondriacal insanity; (10) epileptic insanity; (11) acute delirium; (12) progressive paralysis (dementia paralytica); (13) cerebral syphilis.

The Refuse of Cities.—According to an abstract in *The Sanitary News*, July 4, 1891, the town of Chelsea, in England, since two years, disposes of its refuse by a method of sifting, grinding and incineration, by which the utilizable portion of the materials collected is separated from the useless. Special devices overcome the nuisances that would otherwise arise from the dissemination of bad odors and from the smoke generated. The products obtained are used as fuel, for making brick and paper pulp, and for fertilizing purposes.

Fracture of the Clavicle from the Recoil of a Rifle.—Simpson (*Edinburgh Medical Journal*, June, 1891) reports the case of a man, thirty years old, in whom, after engaging in rifle practice, a transverse fracture of the right clavicle was found. Instead of holding the butt of the rifle close to his shoulder, he rested the upper end of the butt on the most prominent portion of the clavicle, so that in firing the whole force of the recoil came upon the clavicle.

Nitroglycerin for Asphyxia.—In a case of asphyxia from the inhalation of illuminating gas, Hoffmann (*Allgem. med. Ztg.*) succeeded in relieving the symptoms by the subcutaneous administration of nitroglycerin in doses of a hundredth of a grain. The injection was made in the precordial region, and was followed by marvellously prompt results.—*National Druggist.*

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SATURDAY, AUGUST 8, 1891.

THE BRITISH MEDICAL ASSOCIATION.

IT is with pleasure that THE NEWS presents to its readers to-day a partial report of the proceedings of the fifty-ninth annual meeting of the British Medical Association, held at Bournemouth, July 28th, 29th, 30th, and 31st. The magnitude of the meeting and the importance of its work are indicated by the large number of sections that participated, together with the enormous number of papers presented by a long array of names distinguished in every department of medicine. Emanating from a body having a membership of nearly fourteen thousand, these papers deserve the careful consideration of progressive men and women of the medical profession in all parts of the world.

That the American medical profession should have in its hands a report of the addresses made in the various sections, a little later than a week after their utterance, is a matter for sincere congratulation and is an evidence of the strong bond that unites the medical profession of the two greatest nations of the world, having in common more than a common language.

One cannot avoid being struck by the conservative tendency displayed in most of the principal papers, which stands out in contrast to the radical sentiment that pervades the medical thought of the day.

FATHER MOLLINGER.

THE interest in FATHER MOLLINGER, of Troy Hill, Pittsburg, concerning whom allusion was made in THE NEWS of June 27th, seems to have both abated and changed in character.

Concerning the reverend Father's personality, etc., we are permitted to quote the following from a private letter written by one of Pittsburg's best physicians:

" . . . in point of fact, FATHER MOLLINGER is like the regulation prophet in having more honor outside than inside his own bailiwick. I have a limited acquaintance with him. The man has an imposing presence, and a head that would make a study for an artist. A man of large and powerful frame, and the voice of Boanerges. Withal he is highly educated, ranking a fair knowledge of medicine among his accomplishments. In addition he has an innate love of the beautiful, and spends large sums in purchasing 'rich and rare' materials and objects and precious relics with which to decorate the chapel he has built, and which is perhaps unique in this country.

"FATHER MOLLINGER is a shrewd man, and I believe prescribes for almost all cases. The impression I formed of him was that he was not inclined to quackery, but that as a religious teacher he was bound to believe (with sincerity, I thought) that 'the prayer of faith will save the sick.'

"When you add to the influences I have alluded to, the fact that his advice was, ostensibly at least, gratuitous, it is not much wonder that his *clientèle* increased to considerable dimensions. But, after all, it was printer's ink that 'did the business.' As St. Anthony's Day (his patron saint) approached the number of pilgrims to 'Mount Troy' gradually swelled, chiefly I think owing to the persistent work of sensation-hunting reporters. When the great day passed there was a sudden collapse.

"As I have said, I think that several years ago FATHER MOLLINGER'S actions were unexceptionable from his point of view. As to his course more recently, I am inclined to think that (if one may compare small things with great) he has been going through a psychological experience something like that of Savonarola. He has been forced by the adulation—I might say, the adoration—of his devotees to do things which would seem to predicate the possession of miraculous power. For example, he would place his hands on the eyes of the incurably blind, or on the limbs of the hopelessly para-

lyzed, and go through some form of invocation, the unfortunate sufferer in the meantime momently expecting an exhibition of Divine power in his behalf. Of course, no miracles were performed, and of course, therefore, many who were devout believers are equally devout skeptics to-day."

Peculiarly interesting facts in reference to Father Mollinger are, that he was a regularly graduated and practising physician (in Germany) before becoming a priest, and that, together with the laying-on of hands and the invocation, he now gives medicines—of what kind does not appear—and that the patients send back for "renewals" from their distant homes.

The *Pittsburg Commercial Gazette* has been getting reports of the alleged cures, and, according to its correspondents and summaries, Father Mollinger's cases of cure are very difficult to find. Three cases were especially famous, but the patients could not be found at their supposed homes. In Nashville, Tenn., of the fifty or one hundred patients, "each one can tell of someone else who was cured, but when the one designated is found it is discovered that he or she is far from well." Several deaths are reported as following soon after the visits to Mount Troy, due undoubtedly to the strain, exhaustion, and excitement of the journey and its circumstances.

The *Pittsburg Medical Review*, in an excellent editorial comment, says:

"It is to be hoped there were some real cures of imaginary diseases and some imaginary cures of real diseases, to offset the great sacrifice those poor people had made in coming so far. The great majority were of the very poorest classes. They had invested their money as in a lottery, each hoping to be one of the very few who would depart sound again. Many must have been made worse by travel, which is never comfortable to the poor or the sick, as well as the discomforts of their stay in Pittsburg. After their return home they will miss the comforts which might have been had for the money thrown away on an illusory hope."

The history of the whole affair is provocative of serious and pathetic reflections, but its interest and value for physicians must still remain that which has already been pointed out: the power of the imagination and the will over morbid processes and weakened functions, and the capability of a dominant faith and a commanding personality to develop in the patient such volitional control and reaction.

SOCIETY PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Fifty-ninth Annual Meeting, held at Bournemouth, July 28, 29, 30, and 31, 1891.

First Day—July 28.

The President, J. Roberts Thomson, M.D., F.R.C.P., delivered an "Address of Welcome." He discussed the climatological advantages of Bournemouth, but devoted himself especially to the subject of sanitary legislation.

Second Day—July 29.

T. Lauder Brunton, M.D., D.Sc. Edin., LL.D. Aber., F.R.C.P., F.R.S., delivered the "Address in Medicine," in which he took up the changes in the medical profession in the last twenty-five years.

He noted that a great increase had occurred in the knowledge of the nature, causation, and treatment of diseases, and a greater gain in the general adoption of the experimental method by which most of our recent knowledge has been acquired, and from which we may hope even greater advantages in the future. There is also a corresponding alteration in the teaching of medicine, in that instruction is practical instead of theoretical.

He referred to the profound influence that the doctrine of evolution had exerted upon medicine, as a subdivision of biology. As to the changes that had taken place in medical students he stated that there is no other class in which one can find so many gentlemanly, thoroughly well-educated and hard-working men. The struggle for professional existence has become a severe one. Its cause is to be found in the excessive number of men who have been entering the profession notwithstanding the barriers raised by the entrance examination; for this very barrier, by raising the quality of the men, has naturally raised the estimation in which the profession is held, and has, therefore, made it more attractive. But the excessive severity of the struggle, on the other hand, has a tendency again to lower the profession by rendering it so difficult for medical men to make a bare living that they are sometimes tempted to think more of their fees than of the welfare of their patients, and occasionally to resort to such means of making money as tend to bring discredit both on themselves and on the profession to which they belong.

Long ago the doctor's means of diagnosis consisted in inspecting the tongue, feeling the skin, counting the pulse, shaking the urine, and looking at the motions and the sputum. But now, in addition to a thorough training in auscultation and percussion, students have to learn the use of the laryngoscope, ophthalmoscope, and otoscope, and the application of electricity. They have to acquire a knowledge of the chemistry of the urine and its alterations in disease, and, what takes still more time, they have to learn the microscopical appearances, not only of the tissues and excretions in health, but their alterations in disease, and must be acquainted with the methods of staining so as to detect tubercle-bacilli and other disease germs.

Increased knowledge of diagnosis has led to an apparent change in the mortality of different diseases. Thus, the frequency of death from heart disease appears to be much greater and that from apoplexy much

smaller now than fifty years ago. In all probability this difference is not real, but only apparent, and is due to the more accurate diagnosis by which the presence of cardiac disease is now ascertained. The supposed increase in the frequency of carcinoma is probably in great measure due to a similar cause; for it is probable that many cases which were formerly classed as chronic diarrhea, dysentery, jaundice, or dropsy, depended upon malignant disease, while others probably depended upon unrecognized disease of the kidney, for until recently little attention was paid to the condition of the urine.

But real changes, as well as apparent ones, have occurred in diseases. Some have become more frequent and others are rarer. Thus, typhoid fever is almost certainly more common, because the increase of our sewage system has given greater facilities for its spread. Typhus fever, on the other hand, has become comparatively rare. Pyemia is another disease which, although not totally extinct, is very greatly lessened in virulence.

The departments in which the greatest advances have been made within the last five-and-twenty years are those of fevers and diseases of the nervous system. A new era in the study of the latter was foreshadowed by the experiments of Fritsch and Hitzig on the brain of the dog, but it can only be said to have fairly begun with Ferrier's localization in the brain of monkeys of the cortical centers, both motor and sensory, for the brain of the dog was too unlike that of man for experiments upon it to be of much practical use in the diagnosis of human ailments, while the likeness in the brain of the monkey to that of man at once allowed conclusions drawn from the experiments upon the former to be transferred to the latter. Yet if we try to describe in one word the department in which medicine has made the greatest progress within the last quarter of a century, that word must be "fevers;" for during this time we have learned to recognize fever by the use of the thermometer in a way we never did before; we have learned the dependence of the febrile process in the great majority of cases upon the presence of microbes in the organism, and we have become acquainted with an immense number of chemical substances that have the power both to destroy the microbes and to regulate the febrile process.

Though previously used, it is only within the last five-and-twenty years that the use of the thermometer has become at all general. The constant employment of the instrument shows when the temperature of a patient is rising so high as to be dangerous, and affords an opportunity for the use of antithermic measures, such as cradling, cold sponging, cold affusion, cold baths, or by the administration of antipyretic remedies.

The thermometer has not only enabled us to detect the onset and to watch the progress of fever, but in conjunction with microscopical research, physiological experiment and chemical analysis it has enabled us to gain a fuller knowledge of the nature of the febrile process itself. We know that during it the organism is consuming rapidly, like a candle burning at both ends. We have learned also, to a great extent, the necessity for the elimination of the waste products, or ashes, as we may term them, which the excessive combustion produces, and thus we know why the surgeon is so anxious regarding the result of an operation when the kidneys of his patient are inadequate. For if any febrile attack following the operation should lead to increased demands upon these secreting powers, they might fail to meet it, and the retained excreta would poison the patient.

The rapid increase in our knowledge has been due not merely to the constant use of old methods, but to the introduction of new ones. The greatly increased powers of the microscope and the better methods of illumination have been of the greatest service, but their utility would be very much less than it is had it not been for the general introduction of the microtome and the invention of new methods of staining. The facility with which sections are made by it has made microscopical research much less tedious, and has enabled trained histologists to do more work in a given time, and medical students to acquire knowledge more rapidly. But without the method of staining introduced by Weigert and Ehrlich, we should, even with the best microscopes, be unable to recognize most of the microbes that are so important in the causation of disease.

From the cupidity of the Spaniards, which led them to cut down the cinchona trees of the Andes in order to fill their pockets with the gold they received in exchange for the precious bark, while their stupidity prevented them from planting new trees to replace those which they felled, quinine became so dear that attempts were made to produce it artificially. These were unsuccessful, but out of them came the discovery of the anilin dyes, so useful in histologic and bacteriologic study, and the other antipyretics, salicylic acid, acetanilide, antipyrin, phenacetin, etc.

From a study of the factors responsible for the variability in crystalline form of tartaric acid, Pasteur was led to look to life and to living beings as the source of asymmetry. He tried to produce this asymmetry in salts of tartaric acid by fermentation, and found that during the process an organism developed that eats up the dextro-tartaric acid, and leaves the lavo-tartaric acid behind. This led him to investigate such minute organisms, and, by simplifying the soil in which they grew, and separating the organisms one from another, he learned the conditions of their growth, and showed that most processes of fermentation were due to the presence of living organisms.

Fermentation is dependent upon both chemical and biological activity, respectively. Thus diastase is not a living organism, while yeast is essentially vital. Living organisms may, however, be active by the development of chemical ferments, which may be effective (in lesser degree) in the absence of the organisms.

Pasteur next established the dependence of the silkworm disease and of anthrax upon the presence of specific microbes which could be transmitted and communicate the disease, and by destroying the infected eggs of the silkworm he eradicated the disease and restored the silk-industry to France.

He also found that the germ of anthrax could be cultivated outside the living body and grown in flasks under varying conditions, some of which were favorable and others unfavorable to its growth. High temperature enfeebled the virus, so that it no longer killed an animal with the same certainty, and by inoculating first with a weak virus and then with one successively stronger and stronger, he found that animals could be completely protected either from inoculation by the strongest virus

or by infection from other animals suffering from the actual disease.

Another extraordinary fact which he made out was that the virus, thus weakened so that it will not kill a guinea-pig a year old and still less a sheep or ox, may again be rendered most potent by inoculating a feeble animal, such as a guinea-pig a day or two old, and, from this, older and stronger guinea-pigs, the strength of the disease-germs increasing with every inoculation, until finally sheep and cows may be killed by it. We can thus see how an epidemic of disease beginning sporadically and attacking weak individuals may gradually acquire such strength as to carry off the strongest.

The next step in progress was Koch's utilization of transparent gelatin as a culture medium. It thus became possible, from day to day, to study the growth of the germs and to make pure cultures. In this way it became possible to study the life-history of the organism, the influence of soil, temperature, moisture, and other influences upon its growth, and the effect of one organism upon another, when both are grown together. Thus it was found that certain germs were not compatible with one another, while others rendered the soil favorable for the development of still others. Then there is also a conflict between germs and cells that is apt to be influenced by external conditions. In this may be included the phenomenon of phagocytosis.

This process of phagocytosis is now regarded by many as only a small part of the struggle between an organism and a microbe, but it is impossible to see one part of a microbe half-digested by the cell in which it is imbedded, while the outside half remains unaltered, without believing that the process is one of great importance. At the same time, it seems that the process of phagocytosis, where the microbe and the cells meet in close conflict, bears about the same relationship to the total struggle that a bayonet-charge bears to a modern battle. The main part of the fight is really carried on at some distance by deadly weapons, by bullets in the case of the soldier, and by ferments, poisonous albumoses, and alkaloids on the part of the cells and the microbes.

In the last few years increasing attention has been paid to chemical investigation of the ferments and poisons produced by microbes.

It is now possible to separate the albumoses and poisons from the microbes which produce them, either by filtration or by destroying the microbes by graduated heat; for, as a rule, they are destroyed by a lower temperature than the albumose or poisons which they form.

As the albumoses produced by microbes are nearly allied, chemically and physiologically, to those formed in the alimentary canal of the higher animals by digestive ferments, it is natural to suppose that microbes, like the higher animals, split up proteids, starches, and sugars by enzymes, which they secrete, and which in both cases may be obtained apart from the living organisms which produce them; that, in fact, we should be able to isolate from microbes bodies which correspond to pepsin or trypsin, just as we can isolate these from the stomach or pancreas of an animal. In some, although not in all cases, this attempt has succeeded.[1]

[1] *Vide* Brunton and Macfadyen, Croonian Lectures on Chemical Structure and Physiological Action, British Medical Journal, June 15, 1889, p. 1336.

The albumoses produced by microbes resemble those formed during normal digestion in being poisonous when injected directly into the circulation, although they may not be so greatly absorbed from the intestinal canal. One of the most remarkable discoveries in regard to albuminous bodies is the fact that some of them which are perfectly innocuous, and, indeed, probably advantageous to the organism in their own place, become most deadly poisons when they get out of it.

It is possible that one form of albumose may neutralize the action of another, thus rendering both innocuous, while either alone may be a deadly poison.

Perhaps a similar process of splitting up and recombination may explain the formation and disappearance of the enzymes, such as pepsin and trypsin, by which digestion is carried on. The pancreas of a fasting animal will not digest albuminous bodies like fibrin, while the pancreas of an animal killed during full digestion will do so rapidly. Yet the fasting pancreas contains the zymogen, or mother-substance, which yields the digestive ferment, and, as Kühne has shown, by treating it first with acid and then with alkali, it becomes active. Lépine has lately shown that while the pancreas is pouring into the digestive canal a ferment that will form sugar, it is at the same time pouring into the circulation another ferment that will destroy sugar.

Immunity is probably a complex condition, not dependent upon any single factor. If a microbe has gained an entrance into an organism, and produces a proteid or an albumose poisonous to the organism which it enters, it may grow, thrive, and destroy that organism, while the injection of some other proteid that would neutralize the poison might save the animal while the microbe would perish.

Hankin has found that while a mouse inoculated with anthrax will die within twenty-four hours, a rat resists the poison altogether; but if the mouse, after being inoculated with the disease, has a few drops of rat's serum injected into it, instead of dying, as it otherwise certainly would, it survives just like the rat; from the spleen of the rat Hankin has isolated a proteid that has a protective action similar to that of the serum.

Injections of goats' blood and of the serum of dogs' and of goats' blood have been applied to the treatment of tuberculosis.

It is possible that the good derived from blisters is dependent not only upon an influence exerted upon the circulation, but also upon a sort of endermatic administration of proteid matters derived, no doubt from the blood, but altered in their passage from the vessels to the surface of the skin, so as to have an effect upon the body entirely different than if they had remained in their ordinary place.

It is possible, too, that the good effects of bleeding may be due to a similar cause. Experiments upon animals have shown that withdrawal of blood from the veins causes absorption of proteid matters from the tissues, and these may have an action of their own upon the blood and tissues generally with which they are thus brought into contact. Indeed it is possible that free purgation may act in the same way.

Paré rendered surgery a great service when he prescribed the application of ointments to wounds; but Lister rendered a greater when he recognized that the

danger of operations was due to the entrance of germs and, by preventing this, he has completely revolutionized surgical practice; nay, more, he has, to a great extent, revolutionized medicine, for the diseases of the internal organs that were formerly entirely under the physician's care are now becoming amenable to surgical treatment, and diseases of the stomach, intestine, liver, kidney, and lungs, and even of the brain and spinal cord, are now successfully treated by surgery when medicines are powerless to help.

Not only in surgery, but also in infectious disease, has the recognition of disease germs as a source of danger to the organism led to their destruction outside the body and insured safety from their attack.

So long as people were ignorant of the causes of epidemic diseases, they were utterly unable to combat them; but once an epidemic is known to depend upon the presence of a certain organism, precautions can be taken for destroying the organism outside the body by means of disinfectants, or by inoculation lessening the susceptibility of the organism to its ravages inside the body, or combating its effects by means of antipyretics.

In comparing the drugs at our disposal now with those we possessed twenty-five years ago, we are at once struck by two facts, namely, that we not only have a very much larger number of powerful remedies than before, but that we also know better how to use the old ones. Both of these gains we owe to experimental pharmacology, to the testing of drugs upon the lower animals.

Every now and again a loud outcry is raised against vivisection, partly from ignorance and partly from prejudice. Many—probably most of those opposed to experiments on animals—are good, honest, kind-hearted people, who mean well, but either forget that man has rights against animals as well as animals against man, or are misled by the false statements of the other class. These—namely, those who, blinded by prejudice, regard human life and human suffering as of small importance compared with those of animals, who deny that a man is better than many sparrows, and who, to the question that was put of old, "How much, then, is a man better than a sheep?" would return the reply, "He is no better at all"—such people bring unfounded charges of cruelty against those who are striving, to the best of their ability, to lessen the pains of disease both in man and also in animals.

To experimental investigation in animals we owe, in addition to other valuable information, in great measure, our power to lower temperature, for to it is due not only the introduction of new antipyretics such as salicylate of soda, antipyrin, antifebrin, and phenacetin, but the extension of the use of quinine from a particular kind of fever—malaria—to other febrile conditions.

Perhaps the most promising thing about pharmacology is that we are now just beginning to gain such a knowledge of the relationship between chemical structure and physiological action that we can, to a certain extent, predict the action of a drug from its chemical structure, and are able to produce new chemical compounds having a general action such as we desire—for example, anesthetics, soporifics, antipyretics, and analgesics.

But the excessively rapid development of medicine and medical science requires that those who are entering the profession should not only be taught the things that we know now, but should be so trained as to enable them to keep more or less abreast of medical progress. This can only be done by giving them a thorough grounding in chemistry, physiology, general pathology, and pharmacology; and this training must be essentially of a practical nature, not only in the way of demonstrations, but of actual work on the part of the student himself.

The Section of Surgery.

John Ward Cousins, M.B. Lond., F.R.C.S., delivered an address on "Recent Advances in the Treatment of Tuberculous Diseases of the Joints." After considering the historical aspect of tuberculosis of the joints, he briefly discussed the old pathology of tubercle and the relation of the scrofulous diathesis to tuberculosis. The modern pathology of the disease was then taken up and the subject of hereditary transmission considered. It was held that, as during the early stages of joint-disease the morbid action is often localized, arrest is at least possible. There can be no reason why a joint or a bone should not recover, and the tuberculous infiltration subside and ultimately shrivel into a fibrous scar just like a similar deposit in the apex of a lung.

Expectant treatment can be carried out under favorable circumstances, combining rest and protection of the limb with fresh air and exercise. By the use of suitable apparatus, injury can be avoided, while the necessary rest is secured.

Tuberculin has yielded unsatisfactory results.

In some cases, early operative interference has done good.

Whenever the indications for surgical interference are clear, early operation must be attended with many advantages. The risk of delay is always in proportion to the progressive and obstinate character of the disease, and timely aid will often prevent its extension, and at the same time deliver the patient from the danger of deep infection and the development of secondary tuberculous centers. The only hope of cure must depend upon the complete removal of the diseased tissue, and the facility with which this can be accomplished rests entirely upon the extent of the local mischief. The preservation, too, of useful mobility in the joint may be anticipated when the morbid process is well localized, so that the manipulation involves only a limited excision of the synovial membrane and a partial division of the fibrous capsule.

For the successful performance of a partial arthrectomy there must be clear evidence of a localized deposit. In some cases, children have exhibited very little pain or lameness, but the joint has been in some part swollen, with the capsule thickened and the bones enlarged, but without any indication of softening or suppuration. By a well-directed operation, near the neck of the femur or the head of the tibia, search has been made for a spot of tuberculous infiltration, with the result that a carious cavity has been found and small sequestra successfully removed.

Another recommendation for early arthrectomy is the little danger that attends the operation. With ordinary surgical precautions the risk may be fairly considered trifling, even when a portion of bone has to be resected. After a full incision in the most convenient position for exploration and carefully defining the disease, the infil-

trated tissue must be excised with the scissors or cutting spoon, and the cavity thoroughly flushed with hot water. To insure rapid union, the surface should then be dried and the wound closed with deep and superficial sutures. The limb must be kept at rest until the healing process is complete.

The articular cartilages are seldom the seat of primary disease, for as a general rule the morbid process has its origin either in the synovial structure or the articular extremity of the bone. When the osseous tissue is the seat of a tuberculous infiltration, the evidence of its existence is often wanting until softening occurs in it and inflammatory reaction takes place. As soon as these infective changes reach the synovial membrane they extend to all the structures of the joint. Sometimes they make their way through the superficial cancelli to the outer layer of the bone, and then superficial caries and slow suppuration are the result. At another time the morbid process advances in the direction of the articular cartilage, softening and erosion of this structure follow, and then inflammatory changes which, unless checked by surgical treatment, issue in chronic abscess, caries of bone, imperfect arrest of the disease, and finally ankylosis. Now in all these forms of advancing tuberculous disease, surgery offers the only scientific method of treatment, and we can safely repeat our incisions, scoopings, scrapings, and cleanings until the disorder is eradicated and a useful joint preserved. But instead of a slow disorganization, the tuberculous center may be suddenly discharged into the capsule, diffusing the infective material over the whole synovial surface, and kindling suppurative inflammation with great rapidity

In the performance of complete arthrectomy in more advanced cases in which the morbid process is too extensive for any partial operation, a free division of the ligaments and capsule is necessary for the exploration of all the recesses of the articulation, and the excision of deep infiltrations of the synovial and osseous structures, so that the preservation of only a limited mobility must be anticipated. The whole of the pulpy granulation-tissue must be dissected off, and the ligaments and cartilages carefully scraped. It is absolutely necessary to remove every particle of the diseased synovial membrane, and all tuberculous foci in the bones must also be cleanly cut out with the gouge. Care must be taken to prevent any remnants of the infective tissue being left behind on the raw surfaces, and the accidental re-inoculation of the disease through the medium of the fresh incisions. The method of flushing with hot water the seat of operation is the best way of carrying out these important precautions. The operation of arthrectomy of the hip can be readily performed by the anterior and vertical incision and division of the neck of the femur with the saw, and then the excision of the infiltrated tissues. After a simple protective treatment for a few weeks, and the application of a Thomas splint during convalescence, the results are often very satisfactory.

In performing complete arthrectomy of the knee-joint, the old horseshoe incision and an oblique division of the ligamentum patellæ constitute a better method than any other for obtaining free access to the interior of the cavity. The practice of lifting up the tuberosity of the tibia, instead of division of the tendon, may be found very useful in some cases. It is important to carefully clean the lateral and crucial ligaments, and to avoid damaging the cartilages and articulating surfaces. Sometimes carious bone outside the capsule of the joint can be removed with the gouge. It must always be our object to secure the complete extirpation of the diseased structures, and to preserve as far as possible the mobility of the articulation. Fortunately, the limb is not shortened, and the development of the bones is scarcely impaired. The articulating surfaces are in a great measure preserved, and the operation, when compared with resection of the joint, is attended with less risk of life.

Complete resection at once is to be preferred in all cases with old sinuses and the carious remnants of old infiltrations. The joint is freely opened, and as thin a layer of bone as possible is removed from all the articulating surfaces. The gouge is used for cleaning out any infiltrations, and then the patella is divided vertically with the saw. After cleaning every recess in the capsule, the bones are jammed together as tightly as possible, the periosteum is carefully sutured, and the wound closed, except at the extreme ends of the incision.

Conservative surgery in the advanced stages of the disease is not to be advocated, not from the dread of deepening the general and local infection from re-inoculation through the seat of operation, but rather from the feebleness of the vital power, which has been slowly undermined by prolonged suffering and suppuration. The intensity of the disease has been quickened by a chronic septic condition of the system, and it is the danger of its sudden aggravation, even with every possible precaution, which adds to the risk of surgical interference. The microörganisms of septicemia, or their poisonous products, exert a marked influence over the course of tuberculosis, for their presence reduces the resisting power of the system, and helps on the local and constitutional spread of the disease.

But it is not only septic infection in its various forms that we have to combat, but every other kind of acute disorder of the blood. Children especially are liable to be attacked with any of the infectious fevers; and these are all attended with peculiar risks. Measles, from its disturbing influence over nutrition, is prominent among the group, for its power of rekindling tuberculous inflammation.

Occasionally, however, experience has seemed to point in the opposite direction, and an accidental blood-storm has exercised a remarkable effect on the course of the malady.

Now, notwithstanding the risk of late operations, exceptions occasionally occur in practice when interference appears to be the better course. There are certainly cases of chronic tuberculous joint-disease marked by secondary centers and general infection, and even aggravated by a chronic septic condition of the system, in which the vitality of the tissues and the residue of constitutional vigor appear sufficient to warrant an effort in the direction of conservative surgery.

The Section of Obstetrics

was opened with an address by William J. Smyly, M.D. He maintained that gynecology and obstetrics are so intimately related that it is at times difficult to distinguish the line of separation. He cited a number of cases from practice illustrative of his view.

He would not deny to any man the right to limit his practice as he might see fit; but he maintained that, in teaching, gynecology must not be separated from midwifery; this isolation places such difficulties in the way of students, that practical midwifery is not efficiently taught, and the study of gynecology is more or less optional. Clinical teaching can be efficiently carried out only in the wards of a hospital, where too a limited material can be utilized in teaching a number of pupils.

Another important matter is accurate clinical observation, and this can only be carried out in hospitals. It was from observing the comparative mortality in two lying-in hospitals that the cause of puerperal fever was discovered and its prophylaxis pointed out. Puerperal fever is a preventible disease.

In conclusion he gave an account of a septic outbreak that occurred in the Rotunda Hospital, and of the measures taken to eradicate the disease. A patient was permitted to be examined abdominally by any number of students, but vaginally by three only and one pupil midwife. Previously to examination, the external genitals were carefully washed with soap and water, irrigated with plain water, and finally bathed with corrosive sublimate solution, 1 in 500. The examiners' hands were thoroughly cleansed with soap and water and a good nail-brush, the soap removed by carbolic lotion, then the hands washed in sublimate solution. A patient in whom premature labor was induced died of acute septicemia. Subsequently a number of cases presented considerable elevation of temperature. In consequence, vaginal examinations were temporarily abstained from. The temperature was still abnormally high in some instances. Analysis showed that, to avoid infection by the nurse, each patient washed herself. This was changed, and the dressing was done by the nurse with antiseptic lotions. Matters now improved. No unusual elevation of temperature and no further death occurred.

The Section of Psychology

was opened with an address by P. Maury Deas, M.B. London. He devoted himself to a consideration of lunacy-legislation in England, pointing out its defects and inconveniences, and indicating the lines along which reforms may be instituted.

The Section of Pathology

was opened with an address "On the Uses and Prospects of Pathology," by W. Howship Dickinson, M.D.

In times not very remote, little was known of pathology but rough morbid anatomy, and very little of that. Large morbid anatomy has advanced so much, especially during the last hundred years, that it may be believed that there are few changes obvious to the naked eye which have escaped notice. Rough morbid anatomy is the groundwork of medicine, and must ever be essential to the physician as presenting results in a compendious form.

Of the more substantial organs, we probably know something which, though rough, cannot be altogether wrong. Within the last half-century the minute morbid anatomy of the nervous system has been begun, and some lines of light, however dim and narrow, projected into places dark since the creation. Diseases once thought to be functional or without organic change have been provided, some, like essential paralysis, chorea, and diabetes mellitus, with something of morbid anatomy, however incomplete; while others, like tetanus and the paralysis of Landry, have been suspected, if not convicted, of being connected with poisons which, though less visible, are not less material.

The subject of embolism was briefly referred to, and that of suppuration taken up.

The loss of leucocytes, under the name of pus-corpuscles, explains the relation of blood and pus—hitherto a mystery; and the lardaceous deposit as a consequence gives a morbid interest in what is left.

In the past, many diseases have been attributed to either too much oxygen or too little, which was considered with too little regard to the vital action of the organism. The chemical school saw in inflammation only excess of oxidation or combustion, which may truly exist, and of which the increase of temperature may be a result; but it took too little account of what may be antecedent to this in tissue and vessel. In diabetes it saw little more than a deficiency of oxidation, which indeed there may be, but which must be secondary to changes in organic structure which as yet we have seen but imperfectly.

With regard to gout and uric acid as products of suboxidation, the chemists have reached results seeming to embrace the truth less incompletely, though even now there is probably something to learn of organic lesion or disturbance outside the domain of pure chemistry. We know something of hepatic disturbance in connection with uric acid. What more will be added, and to what organs and tissues it will relate, is work for the future.

Hemoglobinuria is closely allied to the symmetrical gangrene of Raynaud, and is associated with localized lividity of the skin. It is held that this lividity is due to the cutting off of the arterial current and the oxygen which belongs to it by vascular spasm, and the destruction of corpuscles is due to the carbonic acid in the parts from which the oxygen is then shut off. If this view is correct, we have a result of suboxidation which deserves a prominent place in chemical pathology.

A disease that presents itself as of chemical origin is scurvy. The conditions that give rise to sea-scurvy are generally known. It is not probably as widely recognized that scorbutic affections are common on shore—among infants brought up by hand. It is to be attributed to the substitution for fresh milk of various artificial preparations. Not that these preparations are in themselves injurious, but they are insufficient.

Milk in its fresh state, and of good quality, whether from biped or quadruped, is antiscorbutic. What fresh milk contains that is so essential and so difficult to preserve, we do not know.

So many disorders have been shown to have foreign organisms associated with them, that we may be sure that before long many more will be in the same position. But if we find a microörganism for each disease, the question may still remain, What is the relationship between the two?

Outside the microörganisms is a pathological system which, though we recognize its existence and its importance, we understand but imperfectly. If the present rate of progress is maintained, we must be on the eve of discoveries in the physiology of disease which can scarcely fail to be of transcendent importance.

The study of the bacillus has given us antiseptic surgery; the study of its products may lead to we know not what in medicine, whether preventive or curative. Old truths grow and new ones gather around them. Jenner's vaccination may prove but the prelude to many similar modes of prevention. Immunity from anthrax and from hydrophobia can be brought about by the introduction of a harmless dose of a poison that in large quantity or a more active form is deadly. Why should not tuberculosis be prevented in a similar manner?

The influence of pathology, that is, of the habitual consideration of the nature and results of disease, has hitherto been to confer that most extensive of all knowledge—a knowledge of what we cannot do. A study of the results of disease and of its natural laws is a continual warning against the superficial fussiness of the shallow practitioner, who claps on here a poultice and there a blister, and somewhere else rubs in an embrocation assiduously, with a greater faith in the penetrating effects of such applications than knowledge of the profound nature of disease. Pathology teaches humility.

Such is the present position; but who can say what is before us? Pathological discoveries which revolutionize our knowledge of the nature of disease are not likely long to remain without practical results in the cure or prevention of it. In the conflict between man and the bacterium, between the highest of animals and the lowest of vegetables, it must be allowed that so far the vegetable has the best of it; but though the more vulnerable the animal is the more inventive, and it may happen in the future as it has in the past that science will prevail against numbers. Bacteriology is in its infancy, but it is gigantic, at least in possibility. To isolate the organic germs of tubercle, leprosy and other diseases which have similar pathological associations may be but the first step toward results which may prove to be of importance to humanity beyond all politics, beyond all conquest, beyond all the appliances which minister to ease, comfort and luxury.

Reference was made to what may be called the geography of pathology, the effects of climatic and other local influences in promoting and preventing morbid processes. Of local influences, though we know comparatively little, yet we know enough to suggest that of the means under our command of modifying chronic disease, change of place is the most important. To know that there is little stone in Ireland and much in Norfolk, little in the western counties, much in the eastern; that while in England it is most frequent in the colder parts, it is so prevalent in India that lithotomy has long been a native accomplishment; to discern the laws which underlie these facts, as we can partially do, cannot fail to throw light on the origin of the disease and help in its preventing.

The frequency and severity of diabetes in some parts of India and Ceylon cannot but suggest the influence of an opposite climate in its amelioration. If scorbutic affections are invited by cold, presumably by way of tissue waste and oxidations, what will be the result of the same agency upon the uric acid diathesis, gout and the disorders in which oxidation is wanting? It might be better to shudder in the frigid zone than to suffer arthritic tyranny in the temperate.

The infrequency of the granular kidney as originating in subtropical districts has already had its influence in the treatment of the disease. Let us know what diseases are promoted and what are prohibited by the *genus loci*; let us take the great forces of external Nature into our confidence and we shall be able to control disease by greater agencies than the druggist can supply.

The Section of Ophthalmology

was opened with an address by N. C. Macnamara, F.R.C.S.

The treatment of immature cataracts was first taken up. Immature cataracts are usually not operated on from a fear that a portion of the cortex of the lens will be left in the anterior chamber of the eye, and will probably excite inflammation of the iris, with its consequences. Inflammation of the iris, however, does not necessarily result from the presence of aseptic cortical matter in the anterior chamber after the operation of extraction. In every such proceeding, the eye should be kept absolutely free of septic matter, and by far the larger portion of the lens, even in immature cataracts, being removed, that which remains cannot well exercise injurious pressure upon the angle of the anterior chamber. The operation of extraction is successful in proportion to the completeness with which the lens and the capsule are removed.

If the conclusion is reached that there is no special reason why an immature cataract should not be extracted, the great advantage to be derived from such a proceeding, in cases of advancing cataracts in both eyes, is self-evident.

It is a mistake to condemn a patient suffering from cataracts in both eyes to wait for an operation until the cataract in one eye has become matured. The results following the extraction of immature cataracts are on the whole more favorable than those of fully formed cataracts, because in the former the lens escapes from the eye with less damage to surrounding structures than it does when a large, hard cataract has to be extracted, provided that a sufficiently large opening is made in the cornea to allow the lens to pass through it with ease, that an iridectomy is performed, and this best at the time of extraction. After rupturing the capsule of the lens, gentle and continued pressure with the curette must be made upon the lower portion of the cornea, the curette following up the lens as it passes outward through the section made in the cornea.

Among the upper classes, especially in those over sixty-five years of age, it is safer, having first applied a solution of cocaine to the eye, to get a thoroughly competent person to administer an anesthetic to the patient before operating. If an anesthetic is administered the eyelids should, after the operation, be smeared with an ointment of vaselin and iodoform, and a carefully adjusted pad of antiseptic wool applied over the eye with a linen bandage, to keep some pressure on the eye for twelve hours, or until all inclination to sickness has passed away, when a light cotton pad and elastic bandage should be substituted for the first dressings. Unless symptoms arise indicating the use of atropine, eserine, or cocaine, these drugs are never used after the operation for extraction. The patient can sit up on the third day after the operation, but the greater the care taken, for at least a fortnight, the better will be the result.

Based upon the conception of glaucoma as dependent upon either some mechanical obstruction to the escape

of fluid through the lymphatic system of the eye, or to an excessive secretion of lymph within the globe of the eye, a relation was traced between hypermetropia, hypertrophy of the ciliary muscle, with an augmented supply of blood, serous effusion, and pathological changes in the lymphatic apparatus of the eye.

Exceptionally glaucoma develops in patients with flat corneæ and shallow anterior chambers. Not only does the angle of the anterior chamber differ in form from that of the normal eye, but the hypermetropia is apt to lead to pathological changes in the tissues constituting the ciliary body, and so to impaired circulation of lymph in the eye, and to faulty innervation of the iris; the pupil, therefore, acts imperfectly, and remains somewhat dilated. Given these conditions, if from any exhausting cause the contractile fibers of the iris are still further relaxed, and the pupil becomes widely dilated, the iris shrinks upon its attachments, and so tends further to obstruct the already embarrassed lymphatic circulation through the ciliary body. In these circumstances an attack of acute glaucoma may occur at any moment, and be as quickly relieved by the application of eserine to the eye, which, as the pupil contracts, draws the iris from the angle of the anterior chamber, and so frees the spaces of Fontana and the passage of lymph from the eye.

The glaucomatous symptoms may be prevented by making the patient *constantly* wear proper glasses, and applying eserine to the eye once or twice a week if the pupil is inclined to remain dilated or the patient has a tendency to increased intraocular tension. The object is to give the ciliary muscle rest, and to keep the pupil contracted.

Four cases of double optic neuritis, developed in the course of influenza, were reported.

In one the appearances were those of intense papillitis, with numerous hemorrhages into the retina, and consecutive atrophy, with blindness. The other three were instances of uncomplicated papillitis with great impairment of vision; the discs in all three gradually cleared, and the patients regained perfect vision.

The Section for Diseases of Children

was opened with an address by JAMES GOODHART, M.D., F.R.C.P.

He objected to the word pediatrics, insisting that the members of the Section were not specialists. He deplored the relegation of a study of constitution and predisposition to a place secondary to microbic influence. He characterized as the specialism of specialism the tendency that sends a woman to a gynecologist for one condition; to an obstetrician for another; to a medical man for a third; that takes her to one specialist for her baby, and to another for an older child.

The child is father to the man. The diseases of children are as the early eruption upon the skin is to the mature affection, and they must be studied, not only as they are seen, but in the light of what they will become; they are an embryonic stage; but they *are* the mature disease modified only by the physiological conditions and activities existing at the time. Disease as it manifests itself at one time and at another does but complete the picture of the one disease, and some are children in some respects to old age, while others, though being yet young, have known no childhood.

Though not recognized as one of the diseases of childhood, gout does occasionally appear in that period, and is not to be discriminated from acute rheumatism; it attacks the larger joints; is attended with free sweating; it certainly attacks the heart, and is also relieved by the salicylates. It may be said, of course, that this is all acute rheumatism. So be it. But if so, we must say that, under some circumstances or at one period of its life, gout is acute rheumatism—a very important fact in the history of the two diseases, if it be true.

It was brought out that excessive excretion of uric acid in the urine was in children, as well as in adults, dependent not only upon a diet rich in meat but also upon a diet largely farinaceous. Renal colic is far commoner in children than is usually supposed, but it passes for stomach-ache pure and simple, and goes unrecognized.

Some children habitually pass a urine of abnormal concentration, in which albumin may occasionally appear; it seems worth consideration whether such a condition may not foreshadow a risk of the supervention of granular kidney.

The shape of the head in children, suggests the future of the man, and tells of the functions of the brain itself. Observation has demonstrated that the frontal lobes of the brain may suffer serious injury with disproportionately insignificant sequelæ in children, as well as in adults. It appears that, a head with an ill-developed and small frontal segment is indicative of the existence of a brain. that will, if sought for, give evidence of some want of balance or control. Such a brain is likely to take on the epileptic habit; it is a brain that slight provocatives stir to frenzy; it is likely to be cunning; it is likely, as time goes on, to exhibit one or the other of the common vices of nervous action—to be intensely self-conscious, or painful; to be impulsively incoherent in its action; to be mad; or worse, criminal. It seems as if the whole order of being is enwrapped in the frontal lobes.

In such children the nervous capital is small; they consequently need to have chosen for them the best investments.

Some children display a special tendency to boils; while erysipelas in childhood presents a contrast with its occurrence later in life, being, in the one, uncommon, prone to be migratory, of indefinite duration and almost invariably fatal; in the other, frequent and transitory. Epistaxis is peculiar to childhood; so is a curious condition of the pupil that is sometimes widely dilated and temporarily insensitive to even the strongest light, but the light removed, the iris immediately acts.

Intussusception is an ailment allied to this in the sense that it is a disorder of an involuntary muscle which may not be the mere accident it is often supposed to be.

Again, what does that common condition, the frequent passage of pale feces mean? Clothed in the garb of the veriest commonplace it is a most important matter, for there are few greater sources of anxiety. A symptom of this kind may mean anything—a disproportionate quantity of milk food, for instance—and unquestionably, in some cases, such as cholera infantum, it is due to suppression of bile.

The interest of these cases lies in what they foretell for the man and woman of the future, for such children, unless wisely treated, develop into the dyspeptic, the morbidly sensitive, the depressed, the neuralgic, the physic-swallower, the patent medicine machine, in short,

the ignoble army of the self-martyred, who think they are liverish and are not; who can tell every detail of the daily variation of their uncomely functions, but of weightier matters, such as the happiness they get out of life, the happiness they impart to life, their objective relations to the world in which they were born to take a part, they have nothing to say or to think.

There is, however, another disease that is considerably illuminated by attempting to trace it back from adult age to childhood—spasmodic asthma. Asthma is never seen as such in babies. If it does not occur as *asthma* it has a representative in an exceedingly common ailment. From babyhood upwards, but less commonly as the child grows older, to be about seven or eight years old—about the age when spasmodic asthma begins to appear, although it cannot be said to be common even at so early an age as that—certain children and certain families are prone to sudden attacks of what is apparently acute pulmonary catarrh. Some of these cases are supposed to be due to chill. The child is therefore watched with the most vigilant care; it is packed in many additional layers of clothing; it is swathed in shawls and neck apparel; it is closely shielded from every breath of air. For a bath a lick and a promise suffice, but the child still catches cold with ever-increasing readiness. It may be thought that the pulmonary disturbance is all due to the *stomach*, and there is less difficulty in establishing a more reasonable probability of an origin of this kind. The child is dieted with the most scrupulous care, and yet the attacks recur. They may be a little milder or less frequent, but the improvement is slight. It is certain that this class of cases is not in the main due either to chills or to indigestion, although, no doubt, these children have unusually sensitive stomachs, and good wholesome food sometimes makes a disturbance in them that would have no effect in those of more healthy parentage.

These cases are of the nature of paroxysmal neuroses, and they are the asthma of babyhood, and they are not to be treated, any more than asthma is, by shielding the sensitive periphery from all stimuli, because now and then such and such things seem to excite an attack—assuming that the healthy infant is exposed only to normal influences. Asthma was never cured by coddling, nor are these attacks. They may be much relieved by a wholesome routine, and by remedies directed to reducing the irritability of the nervous centers.

In addition to the connection between rheumatism and gout, in childhood, it is possible that the so-called essential paralysis of childhood also bears some relation to rheumatism.

Mitral stenosis is said to be congenital and acquired; but a specimen of mitral stenosis in an infant has not been seen; mitral stenosis does not occur in babies. The origin of mitral stenosis is to be sought in the mitral incompetence that is the common, the only form of mitral disease in early infant life. Mitral stenosis does not occur as a malformation, and it cannot occur as the result of inflammatory processes, for the few months of intra-uterine life are not long enough to allow of its production under those conditions of the circulation in the teeth of which it is produced.

Those who devote themselves to the study of the diseases of children will make themselves most useful to mankind, and make their study more interesting and instructive to themselves if they come to their work not as specialists, who are men of single eye, but as those who are accustomed to look all round a case before going special; for, if we except the particular cunning of the hand in the manipulative treatment and management of disease, there is no organ with which, at any rate, physicians are concerned that is not constitutional. There is no part, for instance, more constitutional than the eye, none more so than the nose, none more so than the larynx, none more so than the big toe. It is not enough to know that there is a bacillus tuberculosis, and that its presence works certain destructive processes in our tissues. We want also to know why it affects some people, some families, and not others; and it is conceivable at any rate that the cure or prevention of the ill-effects may, after all, come by understanding or unravelling the meaning of individual proclivity, and not by destroying or starving the invading germ; and this is never more true or more obvious than in children. In the diseases of children there is nothing that gives the smallest countenance to specialism—they are rather to be considered as the grammar of disease.

Third Day—July 30th.

John Chiene, M.D., F.R.C.S. Edin., F.R.S., delivered

the address in surgery.

For his subject he took John Hilton, and for his principle, *rest as a therapeutic agent in the cure of surgical ailments.*

Rest has been divided into mechanical and physiological, but this division is a purely arbitrary one. It has, however, a mental and a bodily aspect—a psychical and a physical side.

We all know it is not work but worry—mental unrest—which kills; a person will bear much physical discomfort in order that he may be relieved of the mental discomfort of his condition. In recommending any special treatment one should take into consideration the effect that the decision will have on the mind of the patient. We all know how frequently operations for carcinoma are unsatisfactory, but we hardly estimate the great mental depression that often follows refusal to attempt to give relief, more especially after the recurrence of the disease—after the primary operation has taken place. An attempt—even if unsuccessful—to remove a tumor will often give the patient a feeling of mental rest in the very thought that no stone has been left unturned in the endeavor to give relief. There is a class of cases that may be termed the "phobias"—syphilophobia, cancerophobia—in which the whole disease is psychic; in no condition is there more pleasure in giving relief, because the condition is a most unhappy one. There is one aspect of the mental side of disease which has not received the attention it deserves. When a patient is confined to bed, away from work, he often suffers as much from the worry of mental inactivity as from the physical disease for which he is under treatment. The prescription "don't worry" might with advantage be burnt; "do some work" should take its place.

This is an age of diagnostic incisions on the part of surgeons, and faith on the part of patients, that after the incision has been made, and the part thoroughly ex-

amined, the surgeon will have more light, and be best able to judge as to what should be done.

In diagnostic incisions we have a valuable aid in avoiding psychical unrest. These diagnostic incisions are the direct outcome of the minimized danger of such incisions. A new diagnostic power has been placed in our hands. The first step in the operation is the diagnosis, and the surgeon has no hesitation in taking this step. He requires from his patient a free hand; he takes less on faith and more on sight.

Dr. Chiene held that chloroform is the best anesthetic. Cocaine as a local anesthetic is of great value in adults. Care must be taken to use a pure solution, and to see that the injection is not made directly into a vein. The use of local anesthetics, such as cocaine, ether, or chloride of ethyl, may be overdone. The work of the surgeon may require to be done in too hurried a manner, not altogether satisfactory either to the patient or to the surgeon. Mental unrest, arising from a feeling of work imperfectly done, worries the surgeon; and in any operation requiring time chloroform is to be preferred to the local anesthetic.

Pain given to a patient, whether in the dressing of a wound or in the examination necessary to make a diagnosis, is a most fruitful source of unrest. Confidence is lost between patient and surgeon; this is more especially true in children. Healthy wounds are not painful; the healing of a wound is a physiological process closely allied to—in fact, it is—growth. Inflammation in wounds can be avoided, and, if avoided, then pain as a cause of unrest is unknown.

One of the most frequent causes of local unrest in wounds and the free serous oozing that accompanies it is the use of unnecessarily strong antiseptics. The use of weaker solutions is gradually replacing the use of the stronger. Asepticism is taking the place of antisepticism. The main danger of contamination is from what is introduced into a wound.

Another aspect of Hiltonism is the use of absorbable drains, so that dressing of the wound is not required in order to remove the drain. Pressure and careful apposition of the edges and surfaces, combined with the absence of any irritating antiseptics, have, to a great extent, done away with drainage of any sort. The safer plan is to provide drainage for twenty-four hours, during the time when reactionary hemorrhage is likely to happen. If India-rubber tubing is used it can be arranged so that it can be removed without disturbance or exposure of the wound. Free evaporation through the dressing is all-important. In psoas abscess free drainage, and its accompaniment, rest, is best attained by a posterior opening at the lowest point of the abscess cavity (the patient recumbent), in the angle between the outer edge of the erector spinæ and the crest of the ilium. So also in retro-pharyngeal abscess; an opening posteriorly to the sterno-mastoid muscle acts in the same way. In both of these forms of abscess the aseptic management of the case is more easily carried out than when the opening is anterior.

Leaden splints should be used to steady limbs after amputation and excision. The splint should be so shaped that it can be unfolded without moving the limb. After excision of the mamma the arm should be anchored by the side with a leaden splint. Pressure should be applied firmly; the distal portion of the limb should be left exposed, so that, if it swells the bandage must be loosened. Pressure is properly applied to any part if it fulfils two conditions, painlessness and non-interference with the blood-current through the part.

Horsehair stitches are valuable, combining rigidity and elasticity—rigidity acting as a splint steadying the edges, elasticity enabling them when cut to be removed without pain. When the stitches are cut, the knot should be grasped and traction made toward the side on which the loop has been cut.

A plaster applied over a boil in its early stages acts as a splint, steadies the part and relieves the pain. The boil is frequently aborted by this simple means.

The value of extension in the treatment of fractures of the lower extremity is universally acknowledged; we have only to take care that it is not overdone. In fractures, injuries, and diseases of the spine, in sacro-iliac disease, and in fractures of the pelvis, the use of double extension is also of undoubted value. Treves has demonstrated the value of rest in enlargement of the lymphatic glands in the neck.

In all cases in which complete rest of the trunk is called for, use a thick and firm mattress made in three pieces, the central portion of which can be withdrawn for the performance of the acts of defecation in both sexes, and the act of urination in the female. In the diagnosis of injuries in the region of the hip, observe the parallelism or want of parallelism between two tapes, one passing through the anterior superior spinous processes and the other through the tips of the great trochanters of the femur.

Dr. Milne Murray has offered an explanation of the action of hot water on the arrest of hemorrhage that well illustrates rest. In epistaxis prevent the air passing through the nasal cavity by tightly grasping the nose, and the epistaxis will frequently cease, the part being kept at rest.

In cranial surgery, we have in the curved incision, as suggested by Mr. Victor Horsley, a means of restoring a flap to cover and give support to the denuded brain-tissue or dura mater. In intracranial hemorrhage, intradural and extradural, we now feel justified in cutting down and arresting the hemorrhage by ligature, or by the hot douche. In apoplexy, an opening into the cranial and dural box is a justifiable surgical procedure, giving rest by relieving tension.

In spasmodic wryneck the patient is in constant unrest. Relief is given by excision of a portion of the spinal accessory nerve.

In rectal surgery gradual dilatation of the sphincter ani before operation gives rest after the operation, as it is followed by a temporary paresis. In colotomy the inguinal region is preferable to the lumbar, because mental worry is avoided by making an artificial anus in a situation which the patient himself has under command. In lumbar colotomy the cul-de-sac between the rectal stricture and the opening in the colon fills with feces and causes unrest. In inguinal colotomy, if the opening is intended to be a permanent one, the whole lumen of the sigmoid flexure should be brought out as a loop through the wound in the wall, and fixed there with long pins passed through the abdominal wall and mesocolon, and again through the abdominal wall, bringing the parietal peritoneum in contact with the visceral peritoneum. Stitches are a source of unrest;

simple apposition is all that is necessary to obtain firm union.

In the ligature of internal piles, the division of the mucous membrane at the anus with scissors before transfixion and ligature, and tying the ligature tightly, so as to completely strangulate the pile, are both means that diminish pain after the operation. The pile-mass dies without any inflammation; it dies of dry, painless gangrene. In cases in which the whole circumference of the gut is affected, excision is the most thorough and satisfactory mode of treatment.

There is no organ in which the value of rest is better illustrated than in the bladder. In disease its systole and diastole can be checked in different ways, and the cystitis caused by the unrest, as evidenced by frequency of micturition, is relieved. This can be done by fixing a gum elastic catheter in the bladder, taking care that the eye of the instrument is just within the cavity, and attaching to the catheter an India-rubber tube that passes into a vessel at the side of the bed. If the tube passes under water below the level of the bladder, and the instrument and tube are full of fluid, there will be, by the siphon-action of the arrangement, a head of water which, by its suction, will remove the water from the bladder as it passes from the ureters. A foot of fall is generally sufficient to keep the bladder empty. If the fall is greater, then the mucous membrane is apt to be sucked into the eye of the instrument, and a block takes place, the bladder filling with urine. When this happens pain will at once be felt by the patient; in fact, his sensations are the best guide to the height at which the vessel at the side of the bed should be placed. By this simple means we can give the bladder rest. In external division of stricture of the urethra the same means can be used to keep the wound absolutely dry and facilitate healing. We can also rest the bladder by perineal or by suprapubic cystotomy. In either case the bladder collapses and the viscus gets rest. In intractable cases of cystitis in the female the suprapubic operation deserves further trial. The unrest after lithotrity is due to fragments of stone left in the bladder after crushing; it is important to crush and entirely remove all the fragments at one operation.

In hemorrhage from the bladder or prostate a suprapubic opening arrests the hemorrhage, the cause of which is the contraction of the bladder, which at once ceases when the bladder is opened. The hemorrhage during the operation may be checked by the use of the hot douche.

In vesical hemorrhage, the mere washing out of the bladder with hot boracic lotion often checks the bleeding; in fact, hemorrhage from any cavity is most easily and satisfactorily checked by the hot douche.

In tracheotomy, Hilton points out the value of rest to the inflamed larynx. One of the main objects of the surgeon is to prevent blood getting into the trachea, and to the lungs, where it is the most fertile source of unrest, setting up pneumonia, the common cause of death after tracheotomy, when death is not due to the disease for which the operation was performed.

In the treatment of cut throat, if we perform tracheotomy at once, and accurately unite the wounded surfaces, we attain more rapid healing, because the wound is not used as a funnel through which the air is admitted to the lungs. Movement of the parts is reduced to a minimum, the part in fact is kept in a state of rest encouraging and facilitating healing.

In the application of a bandage to varicose veins, let us see that it is applied before the patient gets out of bed, and taken off after he is in bed; so also in the application of a truss in hernia the same rule must be constantly followed. Allow the veins to fill, or the hernia to come down once in twelve hours, and the bandage or truss ceases to act as a curative, and only acts as a palliative agent. We allow, by the vein filling or the hernia coming down, a temporary unrest which does away with the good of the previous twelve hours' support of the retentive apparatus. It is well to note that continuous gentle elastic pressure will often act most efficiently, painlessly, and restfully in reducing an irreducible hernia, a prolapse of the rectum or a paraphimosis.

There is another side to this picture, or perhaps it may be the same picture looked at from a different standpoint. Much harm may be done by excessive attention to rest. Evil may result from too prolonged rest. Mechanical rest may, in one sense, be antagonistic to physiological rest. Mechanical rest, in many cases, must be interfered with in order to attain physiological rest. It is here that massage is so valuable.

In breaking down adhesions in old standing cases of fracture, sprain, or strain, one must act in a decided manner. Their presence is associated with limited movement, pain on movement, or pain on pressure, and the use of firmly applied rotatory massage, or the sudden stretching of the tissues that are matted together, often gives immediate and lasting relief.

In the case of nerve-stretching in sciatica, the cases that are benefited are, in my opinion, those that may be called trade sciaticas, due to some special position adopted in the special trade pressing on and irritating the sciatic nerve. The pain is relieved by breaking down the fibrous adhesions in the nerve-sheath and also among the nerve-fibrils. The operation is sometimes a source of physical unrest to the operating surgeon if he does not easily find the nerve; this unrest is avoided if, in operating, the patient lying on his face, the surgeon will stand on the opposite side of the limb to be operated upon. If he then makes an incision over the nerve at the lower border of the gluteus maximus large enough to enable him to introduce his forefinger, with which, using it as a hook, he draws the middle line of the patient, he will at once find the nerve lying externally to the muscles arising from the tuber ischii.

Fourth Day—July 31st.

Edward Seaton, M.D., F.R.C.P., delivered the "Address in Public Medicine." He devoted himself to a consideration of "The Evolution of Local Sanitary Administration."

NEWS ITEMS.

Conviction of a Medical Practitioner for Malpractice.—On Saturday, July 4th, Caleb Charles Whitefoord, M.R.C.S. Eng. and L.S.A.London, was convicted at the Central Criminal Court, London, on a charge of procuring abortion, and sentenced to five years' penal servitude. The evidence made it abundantly clear that his conviction was just.

Medical Students at German Universities.—

	Winter, 1890–91.			Summer, 1891.		
	Germans.	Foreigners.	Total.	Germans.	Foreigners.	Total.
Berlin	1014	383	1397	951	306	1257
Bonn	270	11	281	304	19	323
Breslau	297	6	303	339	5	344
Erlangen	147	242	389	135	211	346
Freiburg	93	218	311	79	288	367
Giessen	85	73	158	88	74	162
Göttingen	164	50	214	173	46	219
Greifswald	341	30	371	360	30	390
Halle	227	42	269	224	46	270
Heidelberg	100	199	299	79	239	318
Jena	66	148	214	53	161	214
Kiel	171	66	237	225	94	319
Königsberg	222	13	235	250	11	261
Leipzig	415	498	913	389	457	846
Marburg	201	41	242	231	45	276
München	489	568	1057	469	664	1133
Rostock	56	80	136	47	81	128
Strassburg	121	208	329	110	227	337
Tübingen	122	114	236	109	156	265
Würzburg	169	738	907	142	652	794
Total	4770	3728	8498	4757	3812	8569

—*Fortschritte der Medicin*, July 15, 1891.

A Five Years' Medical Course.—The Medical Council of the College of Physicians and Surgeons of Ontario recently passed the following resolution: "On and after July 1, 1892, every student must spend a period of five years in actual professional studies, except as hereinafter provided, and the prescribed period of studies shall include four winter sessions of six months each and one summer session of ten weeks; the fifth year shall be devoted to clinical work, six months of which may be spent with a registered practitioner in Ontario and six months at one or more public hospitals, dispensaries or laboratories—Canadian, British or foreign—attended after being registered as a medical student in the register of the College of Physicians and Surgeons of Ontario; but any change in the curriculum of studies fixed by the Council shall not come into effect until one year after such change is made."

Medico-Chirurgical College.—The following changes have been made in the faculty: Dr. G. E. Stubbs, Emeritus Professor of Clinical Surgery; Dr. W. S. Stewart, Emeritus Professor of Obstetrics and Clinical Diseases of Women; Dr. H. E. Goodman, Honorary Professor of Surgery, Clinical Surgery and Orthopedics; Dr. J. H. Anders, Professor of the Principles and Practice of Medicine, Clinical Medicine and Hygiene; Dr. E. E. Montgomery, Professor of Obstetrics and Gynecology; Dr. Ernest Laplace, Professor of Surgery, Pathology and Clinical Surgery; Dr. W. F. Waugh, Professor of Clinical Medicine.

American Dermatological Association.—In addition to the papers announced to be read at the meeting of the American Dermatological Association, the following will be presented:

The Hypodermatic Use of Hydrargyrum Formamidatum in Syphilis, by Dr. R. B. Morison.

Retarded Hereditary Syphilis, by Dr. R. B. Morison.

Epilation: its Range of Usefulness as a Dermatotherapeutic Measure, by Dr. J. Zeisler.

Hygienic Exhibition at Vienna.—An international exhibition of food supply and domestic hygiene will be held at Vienna from September 1 to December 1, 1891. The organizing committee includes the names of Professors Ludwig, Vogel, Max Gruber, F. von Gruber, Kratschmer and Rösler, besides Drs. Hamelkoos, of Amsterdam, Reichardt, of Jena, Monin, of Paris, and Bein, of Berlin.—*British Medical Journal*, July 18, 1891.

Women Physicians.—Madame Cocepcion Aleixandre has been appointed physician in the "Hospital de la Princessa." It is stated that she is the first woman in Spain to occupy an official position. A Mohammedan girl, Razie-Koutlairoft-Hassum, recently passed, with distinction, the medical examinations at Odessa.—*Int. klin. Rundsch.*, 28, 1891.

The Hygiene of Infants.—A prize of one thousand francs ($200) is offered by the French Academy of Medicine for the best essay on the Prophylaxis of Syphilis during Lactation. Theses in competition must be in the hands of the Academy before the 1st of March, 1892.

Hospital for Women in Bosnia.—It is announced that a hospital for female patients will shortly be erected in Bosnia, all the medical officers of which will be women.

Dr. George E. de Schweinitz has been elected to fill a third chair of Diseases of the Eye created by the trustees of the Polyclinic.

Italian Pharmacopœia.—The new Italian Pharmacopœia is now ready. It has been three years in preparation.

Dr. F. Fuhr has been elected professor extraordinary of surgery at the University of Greifswald.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 28 TO AUGUST 3, 1891.

MUNN, CURTIS E., *Surgeon.*—Is granted leave of absence for twenty days, to commence on or about August 5, 1891.

POWELL, JUNIUS L., *Assistant Surgeon.*—Granted leave of absence for two months, on surgeon's certificate of disability, with authority for his admission to the Army and Navy General Hospital, Hot Springs, Ark.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

ON THE NATURE OF INFLAMMATION, AND ESPECIALLY THE PRODUCTIVE INFLAMMATIONS OF CONNECTIVE TISSUE.[1]

BY HERMANN M. BIGGS, M.D.,

LECTURER ON GENERAL PATHOLOGY AND PATHOLOGICAL ANATOMY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, PATHOLOGIST TO THE NEW YORK CITY HEALTH DEPARTMENT, CHARITY HOSPITAL, THE ITALIAN HOSPITAL, ETC.

SEVERAL years ago I became convinced that the usual conception of inflammation, the nature, interpretation and sequence of the processes and their significance, was not only incomplete and far from satisfactory, but was based upon essentially false views. There is no better evidence of the incompleteness of our knowledge of this subject than the inability to define the process or describe it in any way that will give any idea of its nature, lesions, signs and symptoms, or terminations. It is often defined by attempting to describe the cardinal signs and symptoms, and we soon find that these signs and symptoms are not only not peculiar to or characteristic of inflammation, but are entirely absent in many of the forms of disease that are called inflammatory.

Cornil and Ranvier define inflammation as "a series of phenomena observed in the tissues or organs analogous to those produced artificially in the same parts by the action of a physical or chemical irritant." Nothing could be more unsatisfactory than this definition, as it simply defines the process by likening it to another of the same kind. Delafield and Prudden say of inflammation: "The conditions of our knowledge are not such as to admit of an exact definition of the term inflammation; nor is there an entire agreement concerning the number of morbid changes to which this term may be applied. We have to be contented with describing the conditions which are probably of an inflammatory character." It is unnecessary to quote other definitions of inflammation in support of the foregoing remarks.

For some time there has been a tendency among some pathologists to consider inflammation from an evolutional standpoint and to regard some aspects of it as conservative. It seems to me that inflammation in all its aspects is to be regarded as essentially conservative or reparative.

[1] Read before the N. Y. Clinical Society, April, 1891.

No attempt will be made to consider the subject exhaustively and in this paper I wish only to throw out a few suggestions, especially on one form of inflammation. I would add that these suggestions represent the aspects of the process that I have attempted to present in teaching this subject during the last three or four years, and I have been more and more impressed in practical experience with the essential truth of the conception, and have been greatly encouraged by the readiness with which students grasp it and put it to practical proof and use.

Since I arrived at the conclusion here enunciated in part, there has been a general tendency among many pathologists toward the acceptation of similar views.

My attention was directed to this subject some years ago by Dr. C. Pittfield Mitchell, to whose writings I feel deeply indebted, although his views differ widely from my own, and I shall introduce my remarks by an extract from his work on *Evolution and Dissolution and the Science of Medicine:* "Single living particles or their assemblages as tissues, organs and compound individuals, present us with a conservative system of forces."

I presume no one will question this proposition. Following this thought a little further it may be said that a disturbance in the equilibrium of these forces produced by external agencies constitutes disease. Now, a readjustment of the equilibrium between these forces, constituting a return as nearly as possible to the normal condition, is in many cases brought about by the processes of inflammation. These processes then become conservative, as are the forces from which they are developed.

I would therefore define inflammation as *the conservative reaction of the organism to noxious influences, brought about through changes in some portions of the vascular system and the connective tissues.* It is Nature's method either of repair or of protecting the organism from noxæ and limiting their action. Its clinical and anatomical features vary and depend upon the nature, mode of application, intensity and duration of action of the noxæ. These noxæ are derived directly or indirectly from without the organism.

The cells and tissues of a compound organism physiologically perform certain functions, and the inflammatory processes are but new functions assumed by certain of these cells and tissues, these

new functions being developed as the result of a morbid condition or a disturbed equilibrium. *Inflammation has always to do primarily with the vascular system and connective tissues.* One of the functions of the vascular system is to supply substances for the nutrition of old tissues and the building up of new tissues. Another function, I believe, is the protection of the organism from the effect of noxious influences acting upon it, these noxæ being derived from without. This latter function is accomplished through the various processes of what we call inflammation. *Inflammation then is only the reaction of the vascular system and its associated tissues (connective tissues) to various noxious influences.* This reaction is essentially conservative, and represents in a general way the most complete protection of the organism or its parts possible under the conditions. The phenomena of inflammation in themselves form only the visible manifestations of the reaction. These manifestations vary in their macroscopical and microscopical appearances according, first, to the nature of the noxæ and their influence on the organism; and, second, according to the ratio existing between the resisting power of the organism and the noxæ. As an illustration of the first proposition we may cite changes occurring in an acute suppurative inflammation as compared with those occurring in a tuberculous inflammation. The differences are quite constant, and depend upon the difference in the nature of the noxæ and their influences on the organism. An illustration of the second proposition may be found in different tuberculous inflammations; in one form, for example, the resistance of the organism to the noxæ is great and the formation of fibrous connective tissue predominates in the process, and in another the resistance of the organism is slight and little connective tissue is produced—the process extends rapidly and suppuration occurs.

It will at once be seen that if this conception of the process is a true one, before we can obtain any correct appreciation of inflammation we must entirely revise our views of the nature of the process, and our instinctive interpretation of the term inflammation. We now regard the inflammatory processes as being in themselves the morbid processes and not as being merely the outward manifestations of Nature's methods of protection or repair. It would be far easier to form a true conception of the nature of the process if we could change its name and call it, for example, *conservation* in place of inflammation. Then the name itself would suggest a preservative rather than a destructive process. It may be easily seen how indistinct and ill-defined the conception of the older pathologists was by the kinds of processes utterly different in nature that they classed together as inflammatory.

I do not propose to take up the consideration of all the forms of inflammation, as this would require far too much time. As to the acute forms, I shall in passing only say a word regarding acute suppurative inflammation. Several of the recent writers, and notably Bland Sutton, have called attention to the essentially conservative nature of suppuration, and this may be demonstrated experimentally with much exactness. One phase of this has been brought out by the researches of Metschnikoff on phagocytosis. The evidence regarding the conservative nature of this phase of inflammation is exceedingly strong.

I shall limit further my remarks to one form of inflammation, viz., the productive inflammation of the connective tissues. It is simply impossible from the old standpoint to explain rationally or intelligently the various conditions under which the productive inflammations of connective tissue occur. There is one reason assigned for their production in one organ in one disease and quite a different one for their appearance in another organ in another disease. It is impossible to harmonize the various theories with the facts or with each other, and yet, the anatomical changes are practically the same wherever the process is found. The conditions under which the affection appears in different situations are also nearly the same, and it would seem as if there must be some ground upon which all should meet. How little these processes were associated together in the minds of the earlier workers is clearly shown by the nomenclature. A student of medicine would little think that the small granular kidney of chronic renal disease, the liver in cirrhosis, the lung in fibroid induration, the heart in interstitial myocarditis, the stomach in gastric cirrhosis, and the brain and spinal cord, in the various forms of sclerosis, all exhibit practically the same anatomical changes in structure.

It is a well-known fact that knowledge becomes simplified as it advances, and it is found possible to group large collections of observations under few heads. That there is some principle that will satisfy all the conditions under which there is a new production of connective tissue, it seems to me, cannot be questioned. The problem presented is to find what this principle is. Another consideration has force in this relation, and that is, that there are strong reasons to regard not inflammation alone but every general pathological process as essentially conservative, and to regard the anatomical lesions of disease as representing, as a whole, the best results, so far as the organism is concerned, that Nature can produce under the existing conditions. The structural changes found in disease should therefore not in themselves be considered as representing morbid processes, but as only representing the injury that

the organism has sustained in its contest with noxious influences. They should be considered as in a general way representing the most favorable reaction between the organism and the external forces acting upon it. It seems probable that the reason we have such processes as inflammation reproduced in practically the same form in various organs and tissues in different species of animals, and in man, is because, in the process of evolution, these reactions to certain external forces conserved to the greatest possible extent the organism acted upon, and were preserved and transmitted to the offspring by a process of natural selection.

The conception of the productive inflammation of connective tissue that I put forward represents the process as being always secondary and as essentially conservative or reparative, and it rationally explains a very large proportion of all the conditions under which productive inflammations occur. Those conditions which apparently cannot be explained now in accordance with this conception will, I believe, admit of explanation when we know a little more of the nature of the process.

We will rapidly take up some of the conditions under which there are new formations of connective tissue, and apply to them the test of this conception.

The first condition under which we have a formation of connective tissue is in the repair of losses of tissue substance or of wounds. When the tissue lost is considerable in amount, unless it is one of the connective tissues, the organism does not reproduce it in kind—or, in other words, when any considerable amount of parenchyma is destroyed it is not reproduced, but its place is taken by fibrous connective tissue. The formation of this tissue is essentially the same under all conditions. There is, of course, no question about the conservative nature of the formation of scar-tissue in the repair of wounds, and it evidently conforms to the definition, "the conservative reaction of the organism to noxæ."

When a foreign body of any kind is introduced into the organism, or when some portion of tissue loses its vitality and so comes to act as a foreign body, there occurs around it a so-called reactive inflammation, associated with the formation of connective tissue. If the foreign body is composed of inorganic matter, as, for example, a bullet, it simply becomes encapsulated, shut off from the rest of the organism and thus rendered harmless. If, on the other hand, the foreign body is organic matter, as a portion of dead tissue for example, not only does it become encapsulated, but it undergoes completely, or in part, what is improperly called organization, *i. e.*, a replacement by fibrous tissue. Capillary loops are pushed into the mass from the vessels in the surrounding newly formed connective tissue. These carry with them round embryonic cells and extend deeper and deeper into the mass. Gradually the mass becomes completely vascularized and as this process goes on the mass is disintegrated and the products of disintegration are carried off. The embryonic cells undergo the usual developmental changes and a scar-tissue is finally formed. Then, depending upon the completness of the process, we find at the point either a simple cicatrix or a cicatrix with the encapsulated and partially disintegrated remains of the original mass. The process that occurs in and around an infarction, a blood-clot situated in the tissues, or a thrombus, is essentially this process. The formation of cysts in the brain after cerebral hemorrhages is, of course, of the same nature—the occurrence of a cyst in the place of a cicatrix being due to the air-tight space in which the brain is situated. The process in each of these cases is evidently conservative; it is Nature's method of separating the dead tissues from the living and of removing the remains of the dead tissues.

The organization of fibrinous exudations is another illustration of the same process—when, for example, on the opposed surfaces of the pleura a fibrinous exudation is deposited; if these surfaces are in contact they are at first agglutinated together; then, as the exudation is dead tissue and acts as a foreign body, there is set up the same kind of a process as occurs around other organic foreign bodies, and it results in the vascularization, disintegration and absorption of the exudation and the formation of adhesions between the surfaces of the serous membranes. The formation of connective tissue here is evidently in response to the same conservative tendencies as in the previous instances.

In the interstitial inflammation in the various viscera the formation of connective tissue is not *primary* but always *secondary*, and is produced in accordance with the same conservative or reparative tendencies that we have seen exhibited in the production of connective tissue under other conditions. The primary change in these processes is in the parenchyma of the organ and is degenerative in character. Nature endeavors to replace the tissue destroyed, but under most conditions does not reproduce the parenchymatous cells, and, in the effort at repair, produces in their place connective tissue. As bearing upon the sequences of the processes in this connection, I may quote from *Evolution and Dissolution*, etc., by C. Pittfield Mitchell, a corollary of Spencer's views of evolution and dissolution:

"Incident forces being equally distributed among the elements of an organic system, the dissolution of functions and structures follows the opposite order of their evolution; the higher and accessory

are less stable than the lower and fundamental; in other words, the more widely cells are separated from the simple fundamental types the more unstable they are. As cells become more highly differentiated and specialized, by just so much do they become susceptible to all forms of noxious influences, or the resistance is inversely proportional to the degree of their specialization and differentiation. This is a principle that needs no elaboration."

Thus we find from an embryological and evolutional standpoint ample confirmation of this conception as to the sequence of the processes. We will now follow it out more in detail in some of the different organs. There can be no doubt that most, if not all, chronic interstitial inflammations are hematogenous in character; they are produced by some noxious influence reaching the organs through the blood. It is thus perfectly illogical to assume that the stable and fundamental connective tissue of an organ first reacts to the depressant, while the highly functionated and differentiated cells of the parenchyma are unaffected. The connective tissues are fundamental, are least differentiated and specialized, and they form the supporting structures of the body.

The connective tissues that are affected in the chronic interstitial inflammations are practically the same throughout the body, and under most conditions certainly are acted upon alike by any noxious influence that reaches them through the blood-current. On the other hand, the parenchymatous tissues are specialized and thus more unstable and less resistant, and they are also subjected in different degree to any noxious influence depending upon the nature of their own function. The kidneys, for example, would be exposed to injury in a much greater degree than would be the case with the liver if there was an excess of the normal urinary excretions in the urine or the presence of some abnormal constituent that is excreted by the kidneys, for the cells of the kidney would then be tried in the performance of their function.

The connective tissue of the liver and kidney, however, might primarily be exposed in nearly or quite the same degree. If we consider for a moment the explanation of the occurrence of cirrhosis hepatis as resulting from alcohol, we see this again well shown. The alcohol passing into the stomach is taken up by the gastric derivatives of the portal vein. It passes with the portal blood to the liver, and coming in contact with the connective tissue of the liver gives rise to proliferation. This is the usually accepted explanation. Let us see how rational it is. There are in the liver, as in other parenchymatous organs, the two forms of tissue—the simple, fundamental and stable connective tissue, and the very highly differentiated and specialized liver-cells. These two kinds of tissue are susceptible to noxious influences in a degree proportionate to their specialization. Yet we are asked to believe that the liver-cells are affected for the most part secondarily, notwithstanding the fact, first, that it is largely a part of their function to dispose of the alcohol, and second, that they are very highly specialized; further, we must believe that the stable connective tissue of the organ has less resistance to the noxious influences than have the liver-cells; and hence, proliferation of the interstitial tissue occurs in response to the irritation. This we are asked to believe, notwithstanding the fact that the connective tissue is for the most part supplied with blood from the hepatic artery, which contains no more alcohol than blood in any other vessel of the body, and notwithstanding the fact that the portal blood containing the injurious alcohol is distributed directly to the liver-lobule and not to the connective tissue. It seems to me that reason and logic have not come into play in this explanation. The new growth of connective tissue here is to be explained in accordance with the theory already enunciated, viz., that the alcohol causes a degeneration of the liver-cells in the periphery of the lobules diffusely throughout the organ, and as the organism does not reproduce them in the attempt at repair, a new connective tissue is produced. It appears to me that there can be no question about the sequence of the processes, although I am aware that some pathologists have regarded it as impossible on anatomical grounds to explain the lesions in this way. The conservative function of the newly formed connective tissue, I admit, cannot now be explained, either in the liver or in some of the other parenchymatous organs, but I doubt very much whether it is as injurious as it is believed to be, and it is formed in accordance with a general method of repair. Nature does not deal with special cases, but with general principles.

We take another illustration. If a considerable portion of muscular tissue is destroyed subcutaneously and aseptically, the muscle is only in part, if at all, reproduced, and its place is taken by newly formed connective tissue. Now, if in place of this a few fibers of the heart-muscle at numerous points in the walls atrophy, degenerate and disappear, as the result of a partial or complete obliteration of some of the smaller branches of the coronary arteries, these muscular fibers are not reproduced, but their place is taken by newly formed connective tissues, and this process of new formation constitutes diffuse interstitial myocarditis. In a large proportion of instances of interstitial myocarditis, the first change is in the coronary arteries. Disease of these leads to obstruction of their lumen, and ischemia of the part supplied; the ischemia results in degeneration. Now, if this degenerative

process went on to any extent, without an associated reparative process, the muscular walls would be destroyed to such an extent that rupture would inevitably occur. But Nature endeavors to repair the injury, and produces fibrous tissue in place of the destroyed muscle, and thus for a long period, and perhaps until the natural end of life, protects the organism from the results that would otherwise have followed—degeneration of the parenchyma. In this instance there can be no question about the sequence of events: the change in the parenchyma is first, and there can be no doubt about the reparative and conservative nature of the process, as it makes possible the continuance of function.

In interstitial nephritis the same sequence of changes occurs. The changes in the kidney are due to the presence of some noxæ in the blood. These noxæ may be the products of over-eating and drinking or of some other poisons that in their excretion act upon the epithelium of the convoluted tubes; and produce a degeneration of them. Following this change there is a secondary new-formation of connective tissues reparative in nature. Most pathologists now admit that in renal cirrhosis the process begins in the secreting portion of the organ, the tubules of the cortex, and that the connective-tissue formation is secondary.

In interstitial pneumonitis or fibroid induration of the lungs, the same explanation holds good. Interstitial pneumonitis, when not associated with tuberculosis, is the result of the inhalation of large numbers of minute particles, such as coal-dust, etc. As we have seen, whenever foreign bodies are introduced into the tissues the organism attempts to render them innoxious either by absorption or encapsulation. In accordance with this tendency there results from the presence of very large numbers of minute foreign particles a diffuse interstitial new-formation.

In the vascular system again, the conservative secondary new-formation of connective tissue is well shown. When there is disease of the arteries producing a degeneration of the middle coats, a new-formation of connective tissue takes the place of the destroyed parenchymatous elements in the muscle and the elastic fibers, as is the case in the heart. In the arteries too, as in the heart, in many cases the cause of the primary degeneration is a disease of the vessels—in this case of the vasa vasorum. The conservative nature of this formation is manifest. When the middle coat is destroyed and the formation does not occur, dilatation and aneurismal formations frequently follow. Another characteristic example of this conservative new-formation occurs in the production of connective tissue in aneurismal sacs. It is not uncommon to find in large aneurisms that the whole of the sac-wall is composed of newly formed connective tissue.

The fibrous new-formations occurring around the infectious new-growths are striking examples of this process. We have learned that in a large proportion of cases of tuberculosis the disease becomes self-limited and restricted to narrow boundaries. This is brought about by the new-formation of connective tissue around individual tubercles or tuberculous masses. The amount of formation of this depends apparently upon the individual resistance to the tuberculous poison. When it is great the tubercle or tuberculous inflammatory products (formed in accordance with the same principle), including the tubercle bacilli, are surrounded by a new fibrous connective-tissue formation, and are thus shut off from the rest of the organism. The frequent localization of tuberculous processes is always the result of such a formation.

I shall refer, finally, very briefly to the sclerosis that occurs in the systemic diseases of the spinal cord. That the new connective-tissue formation in these instances is secondary is now, I think, generally admitted. It is quite impossible to explain the occurrence of a posterior sclerosis, for example, on any other ground than that of a primary degeneration in tracts of nerve fibers which have a certain function. There could be no possible explanation for the occurrence of a new-growth of connective tissue confined to a narrow tract running longitudinally through the cord, when the connective tissue in all parts of the cord is essentially the same. Here, as in the other cases cited, the degeneration is first and the connective-tissue new-formation is secondary, and represents the organism's effort at repair.

With this very imperfect presentation of my conception of the nature of inflammation, and especially the productive inflammations, I will conclude with only a repetition of the view already enunciated, viz., that inflammation pertains alone to the vascular system or the connective tissues, and in all its forms is essentially a conservative process, representing the reaction of the organism to noxæ. It is Nature's method of repair or of destroying or of rendering inert noxious influences. The productive inflammations of connective tissue elucidate in a most characteristic way the truth of this conception, and are to be regarded as being always secondary and as reparative or conservative. The so-called interstitial inflammations should, then, be considered as primarily and essentially degenerations.

Dr. Felix Skutsch, docent in gynecology, has been elected Professor extraordinary at the University of Jena.

RECENT ADVANCES IN THE TREATMENT OF SYPHILIS.

BY CHARLES SZADEK, M.D.,
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IN a lengthy review of the present aspect of the treatment of syphilis, Prof. Kaposi,[1] of Vienna, states that the primary sore, whether hard or soft, is best treated with mercurial plaster. He does not favor excision. Anti-syphilitic treatment should only be instituted when the roseola appears; immediate treatment only delays the constitutional symptoms and has frequently been found to be followed by cerebral symptoms. Kaposi regards inunction as an unscientific, but most efficacious, method of treatment. He recommends subcutaneous injections of soluble preparations of mercury as more scientific and exact. He is decidedly opposed to the hypodermatic introduction of insoluble compounds of mercury, chiefly because they are but slowly absorbed; and if symptoms of mercurialism appear, the mercury stored in the tissues cannot be at once removed in order to arrest the stomatitis or other complications. Iodine and sulphur baths are recommended as protective against relapses after primary relief of the symptoms; hydropathic measures generally are valuable in after-treatment. On the whole, syphilis is characterized as being "eminently curable," though individual predisposition to tuberculosis and other diseases naturally affects the prognosis.

In a valuable paper, read before the neurological section of the Tenth International Medical Congress, at Berlin, Julius Althaus,[2] of London, laid down the following rules in the treatment of syphilis of the nervous system. He considered the prophylactic treatment of nerve-syphilis highly important, as the maladies of this group are among the gravest with which we have in practice to contend, they having no tendency to spontaneous improvement or cure, but a strong tendency to deterioration and death; and, even if judiciously treated, being extremely liable to sudden and severe relapses. He divided prophylactic treatment under two heads, and recommended the excision of the primary sore whenever practicable, in order to destroy the virus in its incipiency or at least to greatly attenuate it, and a mercurial treatment for about three months after the appearance of secondary symptoms. According to his experience, mercury, given efficiently at this stage, acts as a true germicide, leaving the patient's constitution uninjured, as if he had never had the disease. If no such treatment has been followed, there is in any case the possibility, and when there exists a neurotic tendency even a great probability, of the nervous system eventually becoming affected, more especially when such exciting causes as anxiety, grief and excitement, fatigue and privations, exposure to wet and cold, injuries to the head, alcoholic and sexual excesses, and hard intellectual work come into play. Althaus found that a neurotic tendency existed in more than half of his cases, and recommends, after the mercurial course is finished, bracing up by every means in one's power the nervous system in patients that have had syphilis, so as to enable them to resist the inroads of the disease on that system. For the curative treatment of nerve-syphilis he considers the periodical and long-continued hypodermatic injection of small doses of a non-irritant, insoluble preparation of mercury the most important remedy. He passed in review the several modes of employing the metal which have hitherto been in use, and recommends what he terms "carbolized mercurial cream," a preparation that consists of metallic mercury rubbed up with lanolin and afterward mixed with a certain proportion of carbolized oil. He claims for this preparation the following advantages: perfect homogeneity of the mass; great stability; painlessness of injection; absence of swelling and abscesses; great efficiency in truly specific lesions; and absence of the risk of stomatitis and dysentery, if a certain dose be not exceeded. Dr. Althaus discussed the therapeutic value of iodide of potassium, general tonics, the constant galvanic current, and the application of cold and other agents in the treatment of nerve-syphilis. He considers the galvanic current a most important remedy for ordinary secondary lesions and for relieving certain distressing symptoms. He concluded his paper with the hope that the prognosis of these affections in general will eventually become more favorable as the principle of treatment is better understood and more energetically carried out at the beginning.

In selecting a mercurial preparation, in the internal treatment of syphilis, the choice naturally should fall upon such a one as acts with sufficient energy to cause a prompt involution of the manifestations, without unduly irritating the gastro-intestinal tract or affecting the economy in general.[1] Petrini believes that tannate of mercury answers these requirements in a high degree. He employed this preparation in a series of 200 cases of syphilis, and obtained very favorable results. It seemed possible to give it for any length of time without disturbance of the general health. Petrini has found that the drug is mainly eliminated in the saliva, and only to a small extent in the urine. In cases in which three grains were given daily for a protracted period, and in

[1] Wiener medizinische Presse, 1890, 23, 24, 25, 26, 27, 28, 29; Provincial Medical Journal, 1890, 108.

[2] Julius Althaus: Treatment of Syphilis of the Nervous System. London, 1890, p. 35.

[1] Wiener medizinische Presse, 1890, 1, pp. 14–16.

which the urine contained 0.00034 per cent. of mercury, not the slightest affection of the mouth was observed. A pill, containing two-thirds of a grain of tannate of mercury made up with extract of gentian, is ordered once a day with a meal; after ten days or a fortnight the dose is doubled. The patient is treated in this way for twenty-five or thirty days, until the symptoms of the disease have passed off.

Büchler[1] recommends the internal administration of the salicylate of mercury in the treatment of syphilis; having used this drug in thirty-two cases, all of which presented the earlier phases of the disease, he is well satisfied with the results obtained. The ordinary dose prescribed was one-third of a grain, in pill or tablet form, three times a day; this caused not only a rapid involution of the cutaneous manifestations, but also in a like degree that of those of the mucous membranes. Only in three cases was the course of treatment attended by symptoms of mercurialism (in the first case a slight stomatitis was observed after twenty pills had been taken, and in two cases diarrhea supervened after thirty-six and fifty pills, respectively, had been taken). According to Büchler, salicylate of mercury bears the closest analogy to the protiodide of mercury, over which, however, it apparently possesses the advantage of being better tolerated by the gastro-intestinal tract; on enlargement of the spleen the salicylate exerted a most favorable action; on the other hand, it appears to be slower than the protiodide in reducing enlargements of the lymphatic glands. In five cases in which, with the onset of secondary symptoms, percussion showed an increased area of splenic dulness, a perceptible diminution in size was noted after a course of treatment with salicylate of mercury was instituted.

Personally I have used the salicylate of mercury in a series of cases of secondary syphilis, and with most favorable results. I gave it internally in the form of pills, and it was well borne and did not interfere with digestion; in some cases the treatment was continued for six or eight weeks without producing colic or other disagreeable symptoms. The daily amount of the salicylate of mercury that I have prescribed internally for adults has usually varied from one-half to two grains; this was frequently continued two or three months without increase or interruption, or any evidence of tolerance. The ordinary dose of from one-fourth to one-half grain is repeated two or three times daily. The therapeutic effect in all cases was perfectly satisfactory. The eruption began to fade in the course of from eight to twelve days, and the cure was completed in, on an average, from thirty to forty days.

In France a new method of treatment of syphilis has been recommended by Quinquaud:[1] 1000 grams (32 ounces) of calomel are rubbed up with 300 grams (9⅓ ounces) of castor-oil, and mixed with 3000 grams (96 ounces) of diachylon plaster. This mass is spread upon linen so as to yield 14 strips each 3 meters (9 feet) long by 0.20 (7¾ inches) wide; a square of 2½ inches contains about 18 grains of calomel. The skin having been washed with soap, the plaster is applied in the region of the spleen every eight or ten days. Mercury can be detected in the urine on about the fourth day of the application. The method is clean and efficient. Quinquaud has seen papulo-tubercular syphilides resolve in from eight to fifteen days.

The next notable step in advance in the therapeutics of syphilis was in the employment of hypodermatic or intra-muscular injections of mercurial preparations. The subject of the hypodermatic treatment of syphilis with various soluble and insoluble salts of mercury has lately attracted considerable attention among modern syphilographers. The relative advantages and disadvantages of this method of treatment, as well as the employment of new preparations of mercury, has been a theme of liveliest discussion before learned societies; a number of contributions have recently been made upon this subject. The hypodermatic or intra-muscular administration of insoluble preparations of mercury, already a favorite method with some physicians of the old world, has quite lately also received the attention of eminent American specialists.

Moncorvo,[2] of Rio de Janeiro, has employed the hypodermatic administration of the following substances in the treatment of hereditary syphilis: Calomel, yellow oxide of mercury, gray oil, and the salicylate of mercury. The vehicle used for these agents was liquid vaselin. Calomel, the oxide and the salicylate were administered in doses of from 3 to 5 centigrams (½ to ¾ grain); gray oil was used in the proportion of from ½ to 1 cubic centimeter (♏vijss–xv). The last was better tolerated than all the others, the injection being attended and followed by no pain. Moncorvo says that the results did not quite equal his anticipations; that is to say, although beneficial, the hypodermatic injections, although administered at very short intervals (from four to ten days), did not seem to bring about a complete cure as rapidly as one would be inclined to expect. No toxic symptoms, however, were observed. Moncorvo concludes that in a general way

[1] A. F. Büchler: "On the Value of Salicylate of Mercury in the Treatment of Syphilis." Journal of Cutan. and Genito-urinary Diseases, 1890, 5, pp. 174–175.

[1] Bulletin de la Société Française de Dermatologie et de Syphiligraphie, 1890, I. 1, pp. 63–69; British Journal of Dermatology, May, 1890.

[2] Satellite, February, 1890, pp. 110, 111.

this method is less active than that of friction with unguentum hydrargyri.

Herman Klotz,[1] of New York, in a most interesting and valuable paper, related the results of a series of therapeutic experiments made by him with different insoluble mercurial preparations; calomel, the yellow oxide, and the salicylate of mercury were all tried, but the yellow oxide, in the strength of 1 to 30, suspended in water, olive oil, or vaselin, was mostly used. Two hundred and four intra-muscular injections, distributed in thirty-eight series (which were separated by intervals of several weeks or months), had been given twenty different patients. An average of ten injections was given each patient. The greatest number of injections made on any one patient was twenty-four; the smallest, three. As a rule the treatment was well borne; the pain was usually of but moderate intensity. In two cases abscesses were noted, both following an injection of calomel suspended in water; none followed when calomel was suspended in oil. Occasionally slight induration was noted at the seat of the injection. Salivation was absent in almost all cases; the gums suffered much less than during internal treatment or during a course of inunctions. Only in one case did a severe stomatitis develop. Diarrhea, as a result of the injections, was observed but once; in two cases the symptoms of pulmonary embolism were observed, but without any dangerous consequences.

The therapeutic effects of the treatment were in general very satisfactory: the early muscular and papular syphilides disappeared rapidly after two or three injections, and, as a rule, had left no trace when the last injection of the series was made; the tubercular syphilide was at first most favorably influenced by the yellow oxide, but the effect was not lasting; after early recurrence the iodide proved more useful, though it would not prevent the formation of a gummatous periostitis several months later. The affections of the mucous membrane of the oral cavity and the throat were not less favorably influenced by the treatment than those of the skin; even the deeper ulcerations healed rapidly. But in two instances new ulcerations on the posterior wall of the fauces were seen to develop during the period of injection, so that iodine had to be substituted. In the two cases of tertiary syphilis the effect of calomel injections was most satisfactory. Klotz says that there is, however, a great difference in the effects of the different salts, calomel undoubtedly taking first rank and exerting a much more powerful action than the yellow oxide and the salicylate of mercury. It seems that the effects depend, to a certain degree, on the quantity of metallic mercury contained in the salt, a larger number of injections being required as the salt contains a smaller percentage of mercury. In accordance with the observations of Jadasohn and Zeising, Klotz found that while seldom more than four injections of calomel were necessary, six to eight of the yellow oxide and of the salicylate were required to obtain the same results. Klotz concludes that the treatment of syphilis with injections of insoluble mercurial salts is most valuable.

On the continent of Europe the various hypodermatic methods of treating syphilis are at present the order of the day. The number of mercurial salts employed for this purpose continues to multiply, some observers giving preference to the soluble, others to the insoluble, preparations. Those which appear to be receiving most attention just now are hydrargyrum salicylicum, thymolo-aceticum, and benzoicum. The salicylate has recently been reported favorably upon by Gold, Lindeborn, and Lezius.

Gold, of Odessa,[1] claims to have treated 302 cases of syphilis by subcutaneous injections of different insoluble mercurial salts, and to have made 1609 injections without producing a single abscess; infiltrations occurred in four cases. He believes that the salicylate of mercury is altogether the best insoluble preparation of mercury for hypodermatic administration in syphilis.

Lindeborn,[2] of Frankfort-on-the-Main, has employed the salicylate of mercury in the treatment of syphilis in the following solution: Hydrargyri salicylatis, one part; paraffini liquidi, ten parts. The injections were made every five days. The therapeutic results obtained were most satisfactory.

Lezius,[3] of Dorpat, has recently published a paper upon the treatment of syphilis by injections of salicylate of mercury, in which he claims to have obtained favorable results with this preparation. He has employed this remedy in twenty-four cases of secondary and in only one of tertiary syphilis. The formula that he employs consists of one part of the salicylate of mercury and ten parts of liquid vaselin. The injections are usually made every seven days in the gluteal region. Twenty-five patients had received one hundred and twenty-six injections. He found that usually after two or three injections had been made, exanthematous eruptions commenced to disappear, while after the fourth or fifth injection the broad condylomata were well cured. Recent syphilitic manifestations required usually only from three to six injections. In a case of cerebral syphilis

[1] H. G. Klotz: "Clinical Observations on Intra-muscular Injections of Insoluble Mercurial Salts in Syphilis." Journal of Cutan. and Genito-urinary Dis., 1890, 2, 3, 4. pp. 41–49, 98–103, 133–138.

[1] Transact. of the Medical Association of Odessa, April 14, 1890.

[2] Therapeutische Monatshefte, 1890, 4, p. 519.

[3] St. Petersburger medicinische Wochenschrift, 1891, 4.

he claims to have obtained a remarkable curative result, the symptoms rapidly disappearing after four injections of the drug. Finally, Lezius claims that the injections have never been followed by any local inflammatory action, no abscess or toxic symptoms, while stomatitis occurred but rarely, and was in no case severe.

Personally, I have employed intra-muscular injections of salicylate of mercury in a long series of cases of secondary and tertiary syphilis, and always with most satisfactory results. The solution used was as follows:

℞.—Hydrarg. salicylatis . . gr. xvj–xxiv.
Mucilag. gummi arabici . gr. viij.
Aquæ destillatæ . . . f℥vss.
M. ft. suspension.

Of this, one Pravaz syringeful (♏xv) was injected at a time; this was repeated at intervals of three days. I selected the gluteal region as the site for injections. The time during which the cases were treated varied from three weeks to two months. The therapeutic value of the salicylate of mercury was especially remarkable in syphilitic affections of the skin and of the mucous membranes; syphilitic eruptions and slight relapsing forms yielded to the treatment in from two to four weeks. The local reaction was slight—even less than after the use of calomel and of the yellow oxide of mercury. In no case did an abscess form, either at the point of injection or in its vicinity. Infiltrations were rare, and the more pronounced symptoms of mercurialism did not develop.

The thymolate of mercury was in 1889 recommended by Jadasohn, Zeising and Welander for hypodermatic medication. Cehak,[1] of Vienna, has used this drug in a series of cases of secondary syphilis, and is satisfied with the results obtained. He injected a five or ten per cent. emulsion of this preparation in liquid paraffin. The injections were usually made every two or four days; each patient received from six to twelve injections without noticing any local irritation. In no case did an abscess form.

The most recent advocate of the thymolate of mercury is Dr. Löwenthal;[2] he has recently published a valuable article on the intra-muscular injection of this drug in the treatment of syphilis. This paper is based upon his experience with its use in sixty patients, to whom two hundred and ninety-three injections were given, with the following results: Twelve of the patients remained under treatment; the others appeared to have derived unquestionable benefit from the treatment. The injections were made once a week for two or three months. Löwenthal used a ten per cent. suspension of the thymolate with glycerin. Improvement in the syphilitic symptoms became apparent after a few injections. No abscesses were produced in the course of the injections. The pain produced by the injections was mitigated by the addition of cocaine. Salivation was observed only in persons with carious teeth or similar complications. In one patient nausea and rigors were produced by the injections. Löwenthal thinks thymolate of mercury worthy of a place among the means of treating syphilis.

I have also with advantage used the thymolo-acetate of mercury in several cases of syphilis The formula of the aqueous suspension to be injected is as follows:

℞.—Hydrarg. thymolo-acet. . 1.5 parts.
Mucilag. gummi arab. . . 0.5 "
Aquæ destillatæ . . . 20 "
M. ft. suspension.

The injections of a seven per cent. suspension of the drug were made at intervals of three or four days. From six to ten injections suffice in most cases of recent and non-inveterate syphilis. I have especially observed the therapeutic value of the treatment in the early stages of the disease. Syphilitic roseola and the papular affections of the mucous membranes yielded after from four to six injections, or in from twelve to twenty days; the relapsing syphilides, after from two to four injections; the papular cutaneous forms and the ulcerative affections of the mucous membranes after from six to eight injections, or in from fourteen to twenty-five days; the pustular and tubercular affections of the skin required a larger number of injections. This method of treatment occasioned little pain; in no case did an abscess or considerable infiltration develop. During the last two years I have not encountered as a result of the toxic action of mercury disturbance of the digestive organs, of respiration (embolism) and circulation, or any general disorder of importance.

The hypodermatic administration of the new soluble mercurial salt—benzoate of mercury—has recently been employed by the following French physicians: Balzer and Thiroloix,[1] and Cochery.[2] Balzer and Thiroloix have in fourteen cases of syphilis (all in women) employed a watery solution of the benzoate of mercury with sodium chloride and a little cocaine (hydrarg. benzoat., 0.3; sodii chloridi, 0.1; cocainæ hydrochloratis, 0.15; aquæ destillatæ, 4); they made into the back daily injections of the contents of a Pravaz syringe (0.01).

[1] Allgemeine Wiener medicinische Zeitung, 1890, 7, 8, 10, 11.
[2] Deutsche medicin. Wochenschrift, 1890, 25. British Journal of Dermatology, October, 1890.

[1] Médecine Moderne, 1890, i. pp. 46–49.
[2] Constant Cochery: Traitement de la Syphilis par les Injections sous-cutanées de Benzoate du Mercure. Thése, Paris, 1890.

From fifteen to forty injections were given, according to the severity of the case. Of the whole series treated in this way, eight were completely cured; four were decidedly improved; in one case the result was unsatisfactory, although thirty-one injections were administered. The local reaction (pain and infiltration) was slight, and an abscess formed in no case.

The succinimide of mercury recommended two years ago by Vollert, of Strassburg, for hypodermatic use, has recently been employed by Selenieff[1] in a series of thirty-three cases. He employed this drug subcutaneously in a one per cent. solution, and found the therapeutic effects not very marked; he recommends the treatment in mild syphilis, especially in women and children.

Hüfler,[2] of Erlangen, warmly recommends in the treatment of syphilis a new mercurial preparation—the hydrochloric gluten-peptone sublimate, which contains about twenty-five per cent. of mercury. He has treated seventy patients with this preparation, in all upward of thirteen hundred injections having been administered. The solution was so diluted that each syringeful contained two-thirds of a grain, corresponding to one-sixth of a grain of corrosive sublimate. Each of the patients received about twenty injections. From the results obtained, the author regards the preparation as prompt and reliable in action. He did not observe any irritation or the formation of an abscess at the point of injection.

Boer,[3] of Berlin, advises the use of the oxycyanide of mercury in syphilis. He employed this drug hypodermatically in thirty cases of syphilis in a one and a quarter per cent. water solution, making a daily injection of the contents of a Pravaz syringe into the gluteal region or in the back. The duration of the treatment varied from nine to forty days.

Hartman[4] has administered the black oxide of mercury in sixty-eight cases of syphilis. The drug was injected in the form of a 10 per cent. emulsion. Syphilitic symptoms disappeared after five or six injections. In ten cases abscesses followed; in three, stomatitis; pain was always very moderate.

Lindstroem,[5] of Kieff, has employed subcutaneous injections of so-called "gray oil" (introduced into the therapy of syphilis by Lang, of Vienna) in fifty-three cases of syphilis. The dose corresponded to 0.15 (2¼ grains!) of metallic mercury for each injection. His opinion is not favorable to the therapeutic value of the remedy; he says that gray oil acts on syphilitic lesions with comparative slowness during the treatment; fresh eruptions may appear; the injections are frequently most painful and give rise to infiltrations; stomatitis occurred in 48 per cent. of cases; embolism was observed in two cases; relapses seemed to be more frequent than in cases treated with other mercurial compounds.

The following inconveniences and dangerous accidents following subcutaneous injection of some of the mercurial preparations have been recently reported. Maudey[1] in one case observed necrosis of both maxillary bones as an effect of protracted injection of gray oil. Runeberg[2] has reported a case of death after injections of calomel; dysentery was observed by Cramer[3] as a consequence of the injection of calomel; Touton[4] relates a case, in which, after three injections of salicylate of mercury, an abortive herpetic eruption appeared in groups of firm papules in the course of the left posterior femoral cutaneous nerve and accompanied with pain in the left gluteal region; Petersen[5] reports a case in which an extensive erythematous and macular eruption followed half an hour after a calomel injection; the eruption faded in the course of a few days. A second injection, a week later, was followed by a similar, but much less severe eruption. A third injection failed to produce the exanthem. In the same patient a series of injections with the yellow oxide was also followed by a similar train of cutaneous symptoms.

Augagner,[6] of Lyon, has related a singular case, illustrating the inconveniences of the hypodermatic administration of the gray oil of Lang. In the case of a syphilitic patient who was treated with injections of gray oil, the disease followed its regular course and the patient was dismissed as cured. He subsequently, however, displayed a liability to the frequent occurrence of ulcerous stomatitis. Some time later he received a blow on the thigh, at the place where the injections were made; he was taken with so severe an attack of stomatitis that he had to go to the hospital for treatment. There he was found by Augagner to have two tumors, from one of which metallic mercury could be drawn by simple puncture and expression; the other tumor had to be removed and was found also to contain mercury.

The conclusion may be formulated that injections of insoluble salts of mercury at the present time con-

[1] St. Petersburger medicinische Wochenschrift, 1890, 36, pp. 319-320.

[2] Therapeutische Monatshefte, 1890, 9; Therapeutic Gazette, 1890, 11.

[3] Ibid., 1890, 7, pp. 332-338.

[4] St. Petersburger medicinische Wochenschrift, 1890, 3, p. 23-25.

[5] Medicinskoye Obosrenye, 1890, 1, p. 7-11; British Journal of Dermat., June, 1890.

[1] Deutsche medicinische Wochenschrift, 1890, 35.

[2] Ibid., 1889, 1.

[3] Ibid., 1890, 14.

[4] Archiv f. Dermatol. u. Syphil., 1889, 6, p. 775-777.

[5] Journal of Cutaneous and Genito-urinary Diseases, 1890, 10. p. 397.

[6] N. Y. Medical Record, 1890, II., 18, p. 498.

stitute one of the most favorite and valuable methods of mercurial treatment in the practice of a number of specialists of the Old World. Comparative experiments with the various remedies recently introduced for the subcutaneous treatment of syphilis have resulted in demonstrating the superiority of the salicylate and the thymolate of mercury, as convenient curative agents.

Of non-mercurial remedies for the treatment of syphilis, a substitute for iodoform, iodol, is one of the most recent additions to syphilo-therapy. This drug was recommended four years ago by Pick, of Prague, who claims good results from its external and internal administration in tertiary syphilis. I have recently published a paper on the external and internal use of iodol in the treatment of syphilis,[1] in which I record the result of the internal administration of iodol in twenty-two cases of syphilis (five cases of secondary and seventeen cases of tertiary syphilitic manifestations). Iodol was given continuously for two or three months, in doses of from eight to sixteen grains (0.5 to 1.0 grams), two or three times a day. The value of iodol consists in its harmlessness, tastelessness and odorlessness, and in the large proportion of iodine it contains; the intestinal tract is not disturbed by its employment. The therapeutic results were most satisfactory, excepting in two cases of inveterate syphilitic hemiplegia. Externally I found iodol most efficacious in several cases of tertiary syphilitic ulcerations. Cerna[2] has also used this drug in many cases of syphilis, with excellent results. He gives iodol in doses of three grains, three times a day, gradually increasing the dose to as high as twenty grains a day, without producing symptoms of iodism.

Another new anti-syphilitic remedy, cascara amarga, has been recently recommended by Haines,[3] for the internal treatment of syphilis. He believes that this remedy is almost specific, especially in the ulcerations of tertiary syphilis, and states that he has treated seven cases of tardy syphilis with very good results. The last case was one of sloughing of the palate and back of the pharynx; the patient had exhausted the orthodox treatment, and Haines recommended the fluid extract of cascara amarga with iodide. The results of the treatment were brilliant. In secondary syphilis he has seen no good follow the exhibition of the remedy. Its field in syphilis appears to be in the treatment of the tertiary manifestations when marked cachexia exists —cases in which mercury could not be given, and in which the depressing effect of the iodides would be dreaded.

[1] Wiener medizinische Presse, 1890, 8, 9, 10.
[2] The Medical News, 1890, 895, p. 241-243.
[3] Therapeutic Gazette, 1890, 7, p. 451.

SUPRA-VAGINAL EXTRA-PERITONEAL HYSTERECTOMY, INCLUDING THE PORRO OPERATION.[1]

By JOSEPH PRICE, M.D.,
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The question of the justifiability of any operation must be determined by the ultimate results of that operation, together with the risks attending it. To these must be added a comparative estimate of the success of the other methods of treatment, with their results, dangers, and mortalities. The subject is far too wide to be considered in a single paper, which, under the conditions imposed, must necessarily be short, and hence one side of the question must be principally treated, and the arguments and facts elicited stand as data to settle many moot points in the general controversy without entering directly thereinto.

The position assumed against hysterectomy to-day by many who consider themselves authorities in the matter, and hence lead the van in the opposition to operative interference by this method, is one principally of misinterpretation of facts or of sentimental pleading. On the one hand they assume that surgeons deal indiscriminately with all fibroid tumors by a resort to the knife; and, on the other, that any surgical interference is mutilation. On this latter term especial emphasis is laid. Now let it be understood at the outset that only a small number of fibroid tumors require absolute removal. Let it be understood further that many of these tumors, though at first troublesome, disappear more or less rapidly, and cease to cause annoyance. Let it be understood again that by the term fibroid I do not include all hypertrophies, engorgements, or enlargements in which the sound is said to enter two and three-fourths inches, subinvolutions, defective involutions, and the like. By fibroid tumors I mean such growths as when seen and handled leave no doubt that they were foreign bodies as much as the splinter under the nail or the necrotic bone under the periosteum; that they have been a source of misery to the patient, and might have continued a source of revenue to the physician; that without exception the women so suffering, from the complexity of their complaints, referred to bladder, bowels, and circulation, as a result of adhesions and of tubal and ovarian disease, were willing and urgent to be relieved, and in many instances hailed operation as affording at least a chance for life that without operation was not worth having. It is further to be considered that in a considerable number of the cases under consideration in this paper, the operation of hysterectomy was not entertained at the outset, but was performed

[1] Read before the Section of Gynecology and Obstetrics of the American Medical Association, Washington, D. C., May 7, 1891.

as a last resort, because other and less radical measures were not feasible. By less radical measures I mean removal of the appendages; and when I say that this operation was not possible, I wish to draw attention to the fact that in saying that no abdominal operation but hysterectomy is difficult, Mr. Keith underestimates and misstates the situation. I have repeatedly performed hysterectomy when removal of the appendages was impossible. So has Mr. Keith, and his statements in regard to this are just as incomprehensible as they are in some other matters relative to his pretended abandonment of the operation of hysterectomy.

As to the second objection, that of mutilation, little need be said. Describing one tumor removed by him, Mr. Keith says: "No line of demarcation could be made out between the peritoneum and the tumor-wall; adhesion was everywhere most intimate." The omentum occupied the interval between the tumor and the wall, being adherent to both; as all the tissues were edematous, this only increased the difficulty. The transverse colon was firmly attached all along the upper margin; in separating this it was deprived of its omentum and of part of its mesentery. The omentum was so lacerated that most of it was cut away. On examining it after removal from the body it was impossible, even by careful dissection, to separate the adherent peritoneum. As to the result, he says: "The wound healed by first intention. Her health continues excellent, though she is a hard drinker." This tumor weighed thirty-five pounds. With the disturbed relations of the pelvic and abdominal viscera, as a result of adhesions, pressure, and edema, with pain and hemorrhage, we are, I suppose, to consider that this woman had not been mutilated by her tumor, and that only the surgeon's knife in removing the tumor instituted the work of mutilation. This argument in its fallacy can only equal the resolve of the opponents of ovariotomy not to mutilate and endanger the lives of women suffering with ovarian tumors. The sufferers might die, but they should not be "mutilated." Cow-horns might pierce the abdomen, and the patient recover, but the surgeon's knife, never!

Another point here to be insisted upon is that the size of the tumor sometimes—nay, often—has comparatively little to do with the urgency of the conditions necessitating operation. Many of my specimens show this unquestionably. A moderately large, symmetrical tumor may cause little trouble, because, in its growth, it has risen uniformly in the pelvis, and its presence is not more irritating than the fetal head. Given, however, a pelvis-bound fibroid, interfering with all the pelvic organs, together with the pelvic circulation, the situation becomes the most urgent possible. The urgency is still further increased if the tumor be not regular, but nodular, containing cysts or excrescences of various degrees of hardness and size. These are the tumors that are anomalous, and the boundaries of which can as little be determined without actual exploration as the jungles of Central Africa. They defy exact definition, and the surgeon can promise nothing as to their removal until they are seen and felt. In such cases the removal of the appendages is often impossible and often more dangerous than the removal of the entire uterus with its appendages.

The question now arises: What can hysterectomy promise and what can it accomplish? The decision arrived at long ago by Mr. Keith, that unless the mortality at that time could be reduced the operation should be abandoned, was correct. When with his prophetic eye he looked into the future and saw that the operation would never assume a position similar to that of ovariotomy, he was wrong. In the first place his ideas were based upon the unfair limitations he forced upon the operation. He says: "No one was operated upon in good health or condition." This is the key to the whole situation. It was not the operation that was so much to be dreaded as was the condition of the patients. If we operate on the death-bed we must have post-mortem results.

The advantage gained by early operation in hysterectomy is no less real than it is in all other abdominal disease requiring surgical interference. After his wonderful experience, as surgeons all know, Mr. Keith decided the operation justifiable if the mortality could be reduced to 5 per cent. in the bad cases. This can and has been done in the series I submit to the Section: 53 supra-vaginal extra-peritoneal hysterectomies, with 3 deaths; 43 consecutive operations without a death.

The combined mortality of all operators, however, is no criterion by which to judge the operation. The results of those operators who have worked out the details of procedure, with a view only of adding to its safety, with no idea of engrafting upon the procedure something that is more dangerous, as it is more cumbersome, must receive due consideration. The waste of time in carrying out some of the details of certain so-called original methods alone condems them. In all abdominal surgery expedition is essential to success, and nowhere is it more so than in the removal of the uterus.

The idea that in order to receive and merit universal acceptance, an operation must follow and conform to a general cosmetic idea is as ridiculous as it is fatal, and has given rise to a score of so-called original ideas that are only curiosities and often freaks. Upon this argument the condemnation of

the clamp or *serre-nœud* is thoroughly justifiable. With the results by all odds in its favor there is no excuse for experimenting with human life by trying to find something ideal to take its place. If these experiments are to be continued, let some other way be found than by experimenting on patients. The truth becomes more and more evident that intra-peritoneal operations can be performed with safety only in the very smallest number of cases, and even in these not without grave danger, owing to the peculiar nature of the stump. This I have elsewhere discussed. It is only necessary here to repeat that the stump is contractile, often cartilaginous and tough and unyielding. Its bloodvessels are rather to be considered sinuses; consequently when an attempt is made to ligate each bleeding point, the number of points at which a ligature must be left is often enormous, and of itself sufficient to cause pathological changes in the stump. The constriction of the stump, then, is, from its nature, the best mode of treating it. The Kœberlé *serre-nœud* affords the best means of applying such constriction. The method of regulating this constriction will be again referred to.

Coming now to the technique of the operation, it is first to be said that it is one of absolute, careful, painstaking watchfulness. Routine is possible only in the simplest conditions, and each additional complication must be treated and overcome as it arises. It is fatal to the success of the operation to go on in the face of difficulty after difficulty, unless each one is cleared up to leave clear ground for that which follows. The incision—median—is to be regulated according to the size or the depth of the tumor. A mass deeply fixed in the pelvis may require a very large working-space. All bleeding vessels are to be controlled as they are encountered. The mass is then to be studied, and its adhesions located as its removal is attempted. These adhesions are to be regarded as stages of the operation, each one being dealt with and overcome before another is approached. One is not to be abandoned and left bleeding while another is sought and freed. Such work will result in confusion, and prolongs the operation if it does not defeat the result. If bowel, omentum, bladder, abdominal wall, transverse colon or other part of the intestine be adherent, each is to be freed and carefully examined before it is abandoned; all damage is to be repaired at once. While such manipulation is being conducted, all viscera necessarily exposed are to be kept warm, and to be frequently douched with hot water. The bladder is to be most carefully looked after. Complications that endanger this organ, the ureters, or the kidneys are those that most frequently result disastrously in all abdominal operations.

Whether or not the bladder should be injected, in order, when all boundaries are lost, to have at least one landmark, is a question not always easily decided. Sometimes the bladder is so crowded in the pelvis that its injection would accomplish very little; in others, there would be a distinct advantage in distending the organ. The best rule, it seems to me, is to act in each case according to the conditions presented, and not to lose sight of the possible benefit that might accrue from distending the viscus. Having freed the adhesions, the mass, if not already raised while the adhesions were being freed, is to be lifted out of the pelvis. This may sometimes be done without other instrument than the hand; at other times, the broad-bladed corkscrew is necessary. In the case of vascular or myomatous tumors, the capsule of the tumor is to be regarded as sacred ground, bearing the admonition, "Keep off." To wound the capsule is to seriously complicate the operation.

Having so far seen that the operation is one involving a knowledge of the most varied intestinal surgery, and that from the nature of the adhesions one must be prepared to perform any or all of the common abdominal operations, we must briefly retrace our steps and consider the removal of the appendages as a distinct part of this operation. In certain cases the operation is begun with the intention of removing only the appendages, but by reason of the diseased condition of these, and the consequent adhesions and relations, the ablation of the entire uterus is alone feasible, and is forced upon the operator as a last resort. In such instances, the extent of adhesions is apt to be greater and their complications much more serious than was anticipated, even with a careful antecedent *reconnoissance* of the situation. It therefore again becomes apparent that in no case of anticipated removal of the appendages for fibroid tumors should the operator undertake the operation unless he is also prepared to perform hysterectomy. Possible successes have in this manner become disastrous failures.

In the final steps of the operation, to wit, in dealing with or in making the stump, the most skilful surgeon will often find himself hard pressed. In some instances the procedure is as easy as the easiest operation in surgery, under established routine; in others, and for these no absolute rule can be laid down, ingenuity is often taxed to the utmost to obtain and to utilize the tissues freed for the formation of a stump. If it is necessary to make a stump, the capsule of the tumor is to be incised, hemorrhage being controlled by an elastic ligature, the broad ligaments freed and retracted, the mass raised, and the peritoneal covering utilized in shutting off the pedicle from the peritoneal cavity. This all seems clear and concise, but to appreciate the method and its difficulties, a clinical and operative study is in-

dispensable. Herein lies the fallacy of determining the mortality of the operation by the results of all operators. The learner's mortality must always be great in the first series of cases, unless the conditions are extremely simple, or unless the work is done in association with a more experienced worker, who himself has wrought out a technique from the knowledge of the work to be accomplished.

In the application of the *serre-nœud* after the stump has been freed, or made, care must be taken that it is not placed so far down against the vaginal vault as to include the ureters, or to exert too much traction on the abdominal walls. Care being taken to include nothing but the stump, the *serre-nœud* is tightened by means of the screw, the pins are placed in position, and the tumor cut away. The *serre-nœud* is then again tightened to stop all oozing. The stump is then carefully trimmed; while the stump is firmly held in the lower angle of the abdominal wound, the parietal peritoneum is stitched to the peritoneum of the stump, and so excludes the *serre-nœud* from all communication with the abdominal cavity, the two peritoneal surfaces being stitched together below it. The remaining abdominal incision is now closed, drainage being provided for or not, according to the number and extent of the adhesions. The stump again receives attention, dry gauze being firmly packed around it and between it and the abdominal wall. After having been drawn by convenient stitches into as small a compass as possible, its cut surface is dressed with a dry powder, iodoform being the one generally used in my work. In Greig Smith's description of the operation, the final treatment of the stump is left without the exact consideration it deserves.

Finally, I would say that in all these operations the results are astonishing in their smoothness. In many cases there is absolutely no bad symptom, and, in the majority, the recovery is a matter of less concern than in many pelvic cases. In only one case have I had the misfortune to implicate the ureter, and in this I have learned a lesson that hereafter shall stand me in good stead. The details of the case, with its ultimate results, will be the subject of a further communication. The cases, once recovered, are permanently well, with no danger of recurrence. A consideration of my cases shows that the mortality has been reduced below that of the supposed more conservative treatment. The wonder to me is that Mr. Keith, after detailing operation after operation, in which a similar success was recorded, can now so far forget his wonderful record and wish that he could undo his work in order to experiment with palliative and tentative measures. Surgery is an art; its progress must depend on the labors of original workers. The man who stops half-way in the midst of crowning success must leave his art where he found it, and, retreating, abandon his position, unprotected.

A REPORT OF FIVE CASES OF CHRONIC MERCURIAL POISONING.

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THE following cases of mercurial paralysis are interesting examples of the toxic effects of mercury upon persons brought in contact with the metal or with the vapor, and are recorded as a contribution to the literature extant upon the subject of chronic mercurial poisoning.

It will be observed that in these cases the palsy first affected the upper extremities, and then by degrees the entire muscular system. In none of the cases were the muscles of mastication and deglutition involved—this condition occurring only in very advanced cases of the disease. In only one case was there a distinct line, blue in color, upon the margin of the gums. Ankle-clonus was not present in any of the cases. In four instances the knee-jerk was exaggerated. All the cases showed marked mercurial salivation, but in no case was there any history or evidence of the cathartic effect of the drug upon the bowels.

The treatment of these cases consisted in removing the patients from surroundings in which they would be exposed to the ingestion of more of the poison; warm baths were ordered; potassium iodide in gradually increasing doses was prescribed and a mild tonic, such as Basham's mixture, advised. The bowels were also carefully regulated.

CASE I.—P. M., a male, forty-five years old, married, employed in the manufacture of felt hats, presented himself for treatment in November, 1889, with the following history: He had always been a healthy man, and was the father of four robust children. For nine years he had worked in a hat factory, thus coming in more or less frequent contact with mercury, which is used in the business. For a year past he had not felt like himself and for the last six months he had steadily become worse. During this time, his teeth had loosened; his hands had become tremulous and unsteady—so much so, that he could not hold a newspaper still long enough to be able to read it with any satisfaction. Later on, his eyes began to twitch, and in attempting to read, black spots would appear and dance about before them. In walking, his gait was tremulous and unsteady. Upon being questioned, he stated that sexual power was dormant, and had been so for over a year; his weight had markedly decreased — as much as twenty-five pounds during the preceding six months; his appetite had been and still was very poor; the hair had fallen out from his face and head in considerable quantity. He also stated that he

was subject to attacks of vertigo. The bowels were regular and he was not subject to diarrhea. Ptyalism was marked; speech was thick and articulation slow; his memory was poor, and his breath fetid; the border of the gums, at the margin of the teeth, was marked by a distinct *blue line;* the extremities were in a state of constant tremor.

Case II.—John M., fourteen years old, employed in a hat manufactory, came under my observation January 9, 1890. His father stated that the lad was always healthy and full of life until the present illness, since which he had been "dead-like" in his actions. He had been employed in the hat factory for over a year, sweeping the floor and feeding the machines with fur. The history of his illness was, that four months previously he had begun to feel weak; his memory perceptibly failed, and temporary headache ensued; there were marked signs of ptyalism, as well as a bad taste in the mouth and a fetid breath. He was costive; the appetite was unimpaired. About a month later, his gait in walking became unsteady and his feet felt like lumps of lead. In attempting to pick up anything, he was obliged, for want of proper control over his movements, to make several ineffectual attempts. The appearance of the boy betokened a dull intellect. Upon extending the arms, and only then, did marked ataxic symptoms appear in the upper extremities. In walking, the legs dragged and knocked against each other. The tongue was quite tremulous upon protrusion. There was no apparent loss of power as shown by grasp of hand. The teeth were sound and perfect, the gums spongy, bleeding upon slight pressure. The breath was fetid and the salivary secretion profuse. When told to extend the arm with the index finger protruding, and to quickly touch the tip of nose, he obeyed only after an effort and in an uncertain manner, more frequently touching the face, forehead or bridge of nose. Given a pencil and told suddenly to drop it, he had great difficulty in releasing his hold of it. The patellar reflexes were greatly exaggerated, and the ankle clonus absent.

Case III.—M. A. B., thirty-five years old, married; also works in a hat factory. Previous to this employment he had been an hotel-keeper. As a child he was healthy. He had scarlet fever at the age of ten. He never drank to excess, but as a youth indulged freely in venery. At the age of nineteen he contracted syphilis, and was treated for this disease for nearly two years by a well-known genito-urinary surgeon of New York. He was married at the age of twenty-four, and has had five healthy children, his wife never having had a miscarriage. He has been employed in his present business for ten years. He formerly weighed 156 pounds, but since working in the hat factory he has gradually lost flesh from year to year. Soon after entering upon his duties he experienced frequent attacks of indigestion and spells of biliousness, from which affections, he tells me, most of the men in his department suffer. He also states that, whilst some men are affected with diarrhea, he, with the majority of the employés, is constipated. Another curious fact he related was that some of the workmen had no control over the passage of urine; especially was this the case among those employed for any length of time upon the mercurialized materials. The first serious attack of the patient's present trouble dates from August, 1889, at which time his weight was 106 pounds. In this seizure the fingers and hands became shaky, and this was soon followed by general tremors of the body and lower extremities. His appetite was not impaired. At night his sleep was disturbed by dreams of a horrible character and by involuntary muscular twitchings. In talking, his tongue felt thick and he had but little control over its movements. His speech was muffled and at times barely intelligible. Sensation was not impaired. In walking down stairs he experienced considerable difficulty and had a constant fear of falling. He could ascend a flight of stairs all right. In seven weeks he returned to work, but was obliged to quit in a little over a month's time. At the suggestion of a physician, he went to the seashore and indulged in sand-baths. He improved and returned to work, at which he continued until November, 1889. At this time most of his trouble was due to his ataxic gait, though he was still affected by the general tremors. In this attack, his eyesight annoyed him considerably. In reading, letters appeared blurred and would run together. His memory failed. The appetite remained unimpaired—if anything, exaggerated and capricious, although he suffered from indigestion. The bowels were costive, but were regulated by taking a cup of hot water every morning. The gums became quite sore and the teeth loose. In December, 1889, he came under my observation, at which time his condition was as follows: He was fairly well-proportioned; there were general tremors of the body and a marked ataxic gait—the feet seeming to drag along the ground when patient attempted to walk; the strength in the hands was about normal. The breath was fetid, the teeth loose, the gums spongy; upon protrusion, the tongue was quite tremulous; the speech thick and guttural; there was no ankle clonus; the knee-jerk was exaggerated upon both sides, and upon being told to extend the index finger and forearm and to bring the tip of finger to the edge of nose, he was able to do so only after fumbling over face. The lungs and heart were normal.

Case IV.—Martin V., sixty-three years old, married, also occupied in the manufacture of hats, presented himself for treatment January 10, 1890. His previous history was to the effect that he had always been healthy. He was married at the age of thirty-two. He had always been a steady man, had never used liquor to excess, though, like most Germans, he indulged in his glass of beer. He chewed tobacco freely, but seldom smoked. He denies any indulgence in venery until after marriage. He came to this country in 1854, at the age of twenty-seven. In 1870—twenty years ago—he commenced work at his present occupation. For eleven years, or thereabouts, he worked at heating the irons with which the hats are burnished. During this time he felt well, with the exception of a constant cramp in the muscles of the calves of legs. He was then transferred to the fur department, where he helped

to mix the solution of quicksilver and acid used to preserve the fur, and also to pack the fur into five-pound parcels. Soon after entering upon the duties of his new occupation he became dyspeptic and he noticed that his salivary secretion was freer than usual. He also had a disagreeable, metallic taste in the mouth. At the expiration of two years he felt unsteady in his movements, and had slight twitchings of the muscles of the face and upper extremities. His gums also became swollen and sore. Later on, these feelings increased in intensity and were soon followed by tremors, first noticed in the arms, then in the legs, and finally, the ataxic movements became general. He was obliged to quit work, as he could not feed nor dress himself. Under treatment he improved, and returned to the factory. The attack on account of which he sought advice had begun one week previously. The legs became heavy and felt like lumps of lead; the hands and arms became tremulous, the appetite poor and he complained of a constant drowsy feeling. He has had no diarrhea and never has been otherwise than regular in respect to movements of the bowels. He was well-preserved for one of his years. His gait in walking is best described as ambling. The arms were ataxic and it was impossible for him to bring suddenly the tip of the index finger to the end of the nose. The knee-jerk was rather below the normal. No ankle-clonus was present. The teeth were in poor condition, loosened and very much darkened, although the patient affirmed that he had taken good care of them. There was no line upon the gums. The breath was fetid, and there were evidences of salivation. The tongue was tremulous upon protrusion, and he complained of considerable temporal headache.

CASE V.—John K., eighteen years old, employed in the same business as the other patients, came under my care in December, 1889. He did not seem to possess an over-bright mental faculty. Two and a half years previously, he started to work at manufacturing hats; he stated that at that time his physical health was good. Seven months previously he began to feel the effects of the work. His hands became unsteady and tremulous, and a month later his feet were similarly affected. The gums became sore and swollen, and salivation ensued, but the teeth did not become loosened. The memory was impaired. He was obliged to quit work two weeks before he came under my observation. The gait was markedly ataxic; upon standing or sitting, his movements were not unlike those seen in a bad case of major chorea. The tongue upon protrusion was quite tremulous, and mercurial fetor of breath was very noticeable. The gums were spongy, red and quite sensitive; the knee-jerk exaggerated, and the ankle-clonus absent.

1610 ARCH STREET.

"GENTLEMEN, I want you to *love* pathology, for pathology will teach you the morbid processes which govern the body as physiology does the normal, and you must be able to watch these morbid processes from beginning to end; if not, you cannot understand disease; if not, you will be like a sailor without a compass."—DR. H. G. SUTTON.

TYPHOID FEVER WITH LOW TEMPERATURE.[1]

With Remarks as to its Probable Cause.

BY H. L. JENCKES, M.D.,
OF HAZEL GREEN, WISCONSIN.

IN a lecture[2] at the Philadelphia Hospital, Dr. James C. Wilson divided *atypical typhoid fever* into the following classes: (1) mild typhoid; (2) abortive typhoid; (3) typhoid of childhood; (4) typhoid of the aged; (5) cases of febrile intestinal catarrh; and (6) cases of afebrile intestinal catarrh. It is to this last and rare form that I would direct attention.

A case of this kind occurred in a child about ten years of age.[3] When first seen he had been unwell for several days. He complained of headache, his bowels were constipated, and he was slightly feverish at night. During the first six days of treatment there was continuous fever, with a gradual rise of temperature until 103.5° was reached. His pulse was full, strong, and moderately rapid. Marked looseness of the bowels now set in, with some tenderness in the region of the ileo-cecal valve. On the seventh day of treatment, and about the tenth day of his illness, the temperature began to decline and soon dropped to 101°—a fall of 2.5°. As the patient had not been overwhelmed with quinine, or any of the antipyretics, it could hardly have been the result of treatment. During the next three days there was a still further decline of temperature until 98° was reached. Rose-colored spots appeared upon the abdomen, and there was marked tenderness in the region of the ileo-cecal valve. The tympanites was at times marked, and the discharges from the bowels, which remained loose, frequently contained blood. The duration of the illness was about four weeks, and during most of this time the patient's temperature was from 98° to 99° with all the other symptoms of typhoid fever well marked.

This case, with others that have been published, tends to prove that elevation of temperature is not absolutely invariable in cases of typhoid fever, although, excepting in mild cases, it is generally believed to be so. In looking over the literature of the subject at hand, I can find but few cases reported. Fräntzel[4] reports 11 cases of typhoid fever which attacked exhausted individuals, and in which there was low temperature or absence of fever, but in which there were general collapse, serious cerebral symptoms, and a tendency to gangrene of the extremities, which ran a strikingly acute course. Such cases indicate that high temperature is not

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[1] Read before the Dubuque (Iowa) Medical Society.

[2] Medical News and Abstract, July, 1881.

[3] See detailed report in Boston Med. and Surg. Journal, Sept. 22, 1887.

[4] Zeit. für klin. Med., Band ii.; from the Medical News and Abstract, September, 1881, p. 537.

the only cause of death in typhoid fever, but that cerebral symptoms are of great importance, and that, even with low temperature, patients must be carefully watched to prevent them from the many evil consequences of even quiet delirium. In the article on typhoid fever in *Ziemssen's Cyclopedia*, Liebermeister[1] mentions cases in which the temperature was not high, but such cases are classed as mild. He attributes more significance to the character of the temperature than to any other symptom of the disease. Professor Flint[2] says: "More or less increase of the heat of the body is invariable. The rule that during the greater part of the disease the temperature is raised, is without exception; but under certain circumstances the heat may not exceed, and it may even fall below, the standard of health."

In a review of the *Transactions* of the Academy of Medicine in Ireland,[3] I find the following:

"Mr. J. V. Lentaigne's case of fatal peritonitis, following perforation of an ulcerated small intestine, is of very great value with reference to the diagnosis of enteric fever and the occurrence of afebrile cases of that disease. The patient from whose body the specimens were taken came from a notoriously unwholesome tenement, in which thirty-three persons lived in eight apartments. Seven deaths had recently occurred, and one man was then sick abed. Furthermore, the main sewer of the street had been for some weeks open. The man had been ill for about a fortnight and had been refused admission to three hospitals. When received into the Jarvis Street Hospital, although manifestly ill, his temperature was normal, and the difficulty in diagnosis appeared to be due to this fact. The autopsy discovered the lesions of enteric fever."

The writer of this review (James C. Wilson) has elsewhere insisted upon the fact, too little recognized, that enteric fever may run its course not only without the typical temperature of Wunderlich, but even with a subfebrile temperature; and in certain rare cases, the nature of which is established by the complexus of symptoms and the coexistence of house epidemics, actually without any rise of temperature at all. It is a quibble to say that such cases are not enteric fever. They are the specific enteric disease of which the usual fever is merely one of the prominent, but not therefore always essential, symptoms. Professor F. C. Shattuck expresses a similar opinion.[4] He says: "It seems to me that there is absolute proof that typhoid fever may exist and even prove fatal without the presence of fever." And Strube[5] has reported 14 cases of typhoid fever in which the temperature was normal or subnormal. These cases occurred among the German troups besieging Paris.

[1] Ziemssen's Cyclopedia, vol. i.

[2] Flint's Practice of Medicine, p. 878.

[3] American Journal of the Medical Sciences, October, 1884, p. 493.

[4] Boston Med. and Surg. Jour., vol. cxxi., No. 10.

[5] Ibid.

In attempting to account for such cases, it will be necessary to refer briefly to the etiology of typhoid fever. The typhoid bacilli seem to flourish chiefly—or perhaps only—when they find lodgment in the small intestine. The idea that the disease can originate by the inhalation of this pathogenic organism is extremely doubtful. Finding lodgment in the lymphoid follicles, the bacilli not only rapidly multiply, but produce ptomaïnes. Soon the bacilli are carried by the lympathics to the mesenteric glands; from these glands they seem to penetrate into the blood, and finally find lodgment in the spleen, liver and kidneys. The effect of the bacilli, and of the putrefactive process that their rapid multiplication soon produces upon the system, is to produce, first, a toxemia; secondly, a septicemia by causing abscesses in the glandular structures; they may produce a pyemia. It is possible that a toxemia can exist without elevation of temperature, since it is well known that the susceptibility to toxic agents differs greatly in different individuals. Although difficult to explain,[1] this undoubtedly plays an important part. It may perhaps be owing to a greater or less degree of vitality inherent in all cellular and tissue elements. To better illustrate this principle of susceptibility, one might say that yeast produces alcohol, and the absorption of a certain quantity of alcohol produces intoxication. Nevertheless, the absorption of this fixed quantity of alcohol will not produce intoxication in every individual. A case, reported by Professor Rossbach[2], has a corroborative bearing on this question. The patient, he states, was receiving naphthalin for the treatment of typhoid fever. During fifteen days the fever was entirely absent; but no sooner was the remedy suspended than the temperature rose. Professor Rossbach does not claim that naphthalin reduced the fever, but thought that by counteracting the putrefactive process in the intestine the source of the fever process was removed.

It seems therefore not improbable that a toxemia may exist in an individual whose system is so little disturbed by the toxic principle (the ptomaïne) that the usual symptom of fever does not occur. From this study of the subject the following may be deduced:

1. The typical temperature of Wunderlich does not occur in all cases of typhoid fever.

2. That even severe cases are occasionally seen

[1] "It may mean some slight difference in the chemical constituents of the body, the excess of some element that is noxious to the development of the bacteria in question, or the deficiency of some substance that is necessary for their vigorous growth." W. Watson Cheyne in the American Journal of the Medical Sciences for January, 1887.

[2] See the Therapeutic Gazette, January 15, 1885.

in which the temperature does not exceed the normal.

3. That it is unnecessary, and may even be hurtful, to direct the treatment solely to the reduction of the fever. (This refers to *antipyretic remedies*, and has *no* reference to the Brand system of cold baths, the beneficial results of which are confirmed by Ziemssen, Jürgensen, and by members of the Lyons school in France.)

4. If it be true that the introduction of the typhoid bacilli into the system and their rapid multiplication cause putrefaction, and if the absorption of this putrefaction-material produces the phenomena of typhoid fever, then of course it follows that the *early* administration of remedies that will keep the intestinal canal in as nearly an aseptic condition as possible seems imperatively indicated.

CLINICAL MEMORANDUM.

A NOTE ON FLUORESCIN-COLORING AND THE ACTUAL CAUTERY IN CORNEAL ULCERS.

By G. E. de SCHWEINITZ, M.D.,
OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS.

As is well known since the publications of Straub, Thomalla, and Fromm-Groenouw, a concentrated, two per cent. alkaline solution of fluorescin colors green any portion of the cornea deprived of its epithelium, while the healthy epithelium remains unaffected. At first this discovery seemed devoid of practical value, but it soon acquired diagnostic worth in detecting minute abrasions of the corneal surface, particularly when these were of traumatic origin. Perhaps its most important use has recently been suggested by Nieden (*Centralblatt für praktische Augenheilkunde*, May, 1891), in connection with its value as an aid to the actual cautery in the treatment of ulcers of the cornea. This earnest advocate of the galvano-cautery in ocular therapeutics has more than once lamented the lack of exact means for determining how extensive should be the application of the glowing point of the instrument. In his last communication upon this subject he pointed out that he was rarely obliged to resort a second or third time to the use of the cautery, but in the very first instance succeeded in applying the heated needle to the entire area of ulceration, in spite of the fact that he was without a method of outlining with absolute certainty the entire area which required destruction. This means is now at hand in the form of fluorescin, because, by its use, the border between the sound and the diseased area can be demonstrated with exactness. More than this, the depth of the ulceration and any outlying areas of infiltration deprived of their covering of epithelium are indicated by the green coloration. In common with a number of observers, I have often made use of fluorescin for the purpose of staining deep and superficial ulcerations of the cornea, and of demonstrating the rate of progress in the healing of any corneal ulceration, and the presence of minute foreign bodies imbedded in the surface of this membrane. Quite recently, acting on the suggestion of Nieden, I have employed it in several cases of ulcer of the cornea, to which, afterward, the glowing point of a thermo-cautery was applied. Two cases will illustrate its value.

Case I. (Philadelphia Hospital.)—An adult with chronic trachoma: on the left side, in the stage of cicatrization; on the right side, in the stage of ulceration of the follicles, with pannus. This eye, owing to exposure, took on a violent form of keratitis with dense pannus in the upper portion of the cornea, while in the lower half there appeared an irregularly crescent-shaped ulcer with sloping margins and outlying spots of infiltration. The entire cornea exhibited the well-known whitish infiltration so common in this disease. The manipulation was as follows: An application of a few drops of a two per cent. solution of fluorescin (Gruebler's fluorescin 2 per cent.; carbonate of soda 3.5 per cent.) was made to the affected eye. The entire crescent-shaped ulcer was colored a deep green, and, still more interesting, three of the more saturated whitish areas of infiltration situated in the general haze of the cornea acquired a similar color. This at once became the guide for the proper application of the actual cautery. The ulcer itself and the three superficial spots were cauterized, or, in other words, all those spots which had been stained green were subjected to this treatment. It seems to me, in a case of this character, that the three smaller areas certainly would have been overlooked without the use of fluorescin, and their character of superficial ulceration undetected, owing to the obscuration produced by the general haze and development of vessels in the cornea.

Case II. (Children's Hospital.)—A child of about five years of age, with an ordinary phlyctenular keratitis, in the course of which a phlyctenular ulcer appeared below the centre of the cornea. In this stage the child was admitted to the wards, and the following manipulation performed: A few whiffs of ether were given to quiet the little patient, and the point of the cautery applied to the somewhat irregular ulcer and its slightly infiltrated margins. The eye was now washed out with boric acid lotion and a few drops of the fluorescin solution applied. It then became manifest that all ulcerated spots had been destroyed with the single exception of a small portion of the upper and inner margin, slightly distant from the main body of the ulcer, which at once assumed a deep-green, characteristic color. A second light application of the cautery to this spot destroyed the previously untouched area.

Nieden calls attention in his communication to the very points which are illustrated in these two cases selected at random. He dwells particularly upon the fact that in serpentic ulcer of the cornea, beyond the well-known half-moon-shaped area of propagation, one or two small, sharply marked spots of infiltration are commonly present, but, owing to the diffuse opacity of the border-zone of the ulcer, not readily detectable, unless they are colored green by the instillation of fluorescin. Every surgeon must have seen a phlyctenule start at the border of the cornea, break down into an ulcer, push its way toward the centre with an advance guard of infiltration and a rear guard of densely injected vessels, and with a strong tendency to perforate, or at all events to form a stubborn type of keratitis, which, on heal-

ing, leaves a disfiguring stripe of opacity. In such a case a drop or two of the fluorescin mixture will accurately outline the extent of the ulcerated infiltration and give exact information as to where the point of the cautery should be applied, but more than all, as to what extent the destruction of the tissues should be carried.

ORIGINAL LECTURE.

ACUTE ARTICULAR RHEUMATISM COMPLICATED WITH ACUTE ENDOCARDITIS—TYPHOID FEVER,

With Two Relapses and other Complications.

A Lecture delivered at the Philadelphia Hospital.

BY JAMES M. ANDERS, M.D.,
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GENTLEMEN: The patient, an unmarried carpenter, twenty-eight years old, gives a maternal family history of rheumatism. He had scarlet fever and diphtheria in childhood. Seven years ago, he had an attack of articular rheumatism. He admits a history of syphilis. Toward the close of December, he noticed stiffness and soreness in his knee-joints, following exposure—working in the snow. In the course of a day or two his shoulder-joints became affected, and soon the wrist-joints were painful and swollen. In a few days there was some improvement, but subsequently the joint affections again grew worse. On the day of admission the patient was able to walk, though the wrist and shoulder of the left side were swollen and painful. The temperature was 102°. He was given salicylate of sodium, and defervescence soon followed, with improvement in the condition of the joints. A few days later the cardiac impulse was observed to be increased in extent and displaced in location.

The heart beat strongly but regularly, but there was no change in the condition of the pulse at the wrist at this time—an important fact to bear in mind in connection with the cardiac complications of acute articular rheumatism. A soft, blowing, systolic murmur, with slight prolongation of the first sound, was heard with greatest distinctness over the base of the heart and transmitted into the carotids. A day or two later there was detected at the apex of the heart, a soft, systolic murmur, heard most distinctly at the base, not transmitted to the left or to the angle of the scapula, but transmitted into the carotids. The physical signs indicated the existence of an acute exudative endocarditis, though there may have been an interstitial endocarditis. The cardiac percussion-dulness extends beyond the nipple line; the impulse also extends beyond the line of the nipple. The diagnosis of acute endocarditis cannot be positively made in the absence of a systolic murmur, though endocarditis may exist and pass through its various stages without the detection of a murmur. In such a case the alteration in the seat of the impulse, on inspection, and the variability of the seat and intensity of the impulse, on palpation, are evidences of the existence of the inflammation. If chronic interstitial endocarditis already exists, the diagnosis is difficult. When an acute endocarditis is engrafted on a chronic endocarditis, the area of cardiac percussion-dulness is augmented. In the first stage of pericarditis we hear a to-and-fro friction-sound close to the ear, not always synchronous with the action of the heart and not propagated beyond the precordia. In endocarditis the murmur seems more distant; it is heard most distinctly at the apex and with the heart-sounds. In pericarditis the murmur is heard most distinctly at the base. In the second stage of pericarditis, when effusion has taken place, the area of cardiac dulness is increased and of pyramidal shape, the base below, the apex above, and extends a little to the left of the nipple line; the friction-sound heard in the first stage is absent. In endocarditis the area of cardiac dulness is unaltered; in pericarditis the heart-sounds are heard distinctly at the base, though feeble, muffled, and distant at the apex; the impulse is more extensive than in health. Other complications may arise in the course of articular rheumatism. Bronchitis occurs in about 16 per cent. of cases; pneumonia and pleurisy may develop. Pleurisy with effusion is more apt to occur when pericarditis is the primary affection; pneumonia occurs with both pericarditis and endocarditis. General pulmonary congestion may manifest itself suddenly and terminate fatally; not infrequently, in the course of articular rheumatism, death takes place from catarrhal pneumonia. The polyarthritic affection may be mistaken as pyemic; the previous history will aid in clearing up the diagnosis. When pyemia exists, there is a history of injury or abscess or of infectious disease; there are repeated rigors, the temperature suddenly rising to 104° or 105° within an hour, declining by crisis, or with sweating during the remission. In rheumatism there are well-marked exacerbations of fever; the temperature may be high but is sustained, and defervescence is not sudden, while the sweating often continues as long as the fever. The visceral complications of pyemia are different from those of rheumatism; there may be endocarditis and pneumonia, but abscesses of internal organs are common. Pyemia is rather rapidly fatal; rheumatism is not. In pyemia the local affections are not so well marked. In rheumatism the joints have a glossy appearance and the tenderness is in the synovial membrane; in pyemia the tenderness and swellings are more apt to spread above and below the joints. In rheumatism the articular invasion is erratic; in pyemia it is not, though sometimes two or more joints are affected. The points of distinction between rheumatism and glanders need merely be alluded to: glanders usually occurs in those engaged in handling hides or wool; the joint affections occur only in the early stage; later, a typhoid state is developed, with blebs on the skin and subcutaneous abscesses.

The prognosis of articular rheumatism is favorable; the mortality is from 3 to 5 per cent., and is largely dependent upon the visceral complications; the heart complications are apt to lead to chronic incurable conditions.

In this case salicylate of sodium was given in doses of 20 grains every two hours, for twelve hours; during the next twelve hours alkaline treatment was pursued. Salicylate of sodium sometimes aggravates the heart complications; alcoholic stimulants should then be resorted to. If unpleasant symptoms persist, the salicylate should be

withdrawn and the alkaline treatment substituted. Alkalies prevent the visceral complications of acute rheumatism, salicylate of sodium does not. The alkalinity of the blood is maintained by the vegetable acids, so that these may be exhibited as soon as the temperature has fallen several degrees. Quinine may be given in does of 2 grains every four hours. Opium, in small doses (gr. $\frac{1}{10}$ of the aqueous extract), exerts a favorable influence in acute endocarditis and gives relief from pain; laudanum with an alkali applied locally as a lotion gives relief. Before the temperature has fallen to the normal, iron should be given in acute endocarditis to overcome the anemia. The following is a favorite prescription:

℞.—Ferri et ammon. citratis . . . ʒij.
Tinct. gentianæ comp. . . . ʒij.
Glycerini . . . . . ʒj.
Aquæ . . . . q. s. ad ʒiv.
Sig.—A teaspoonful, diluted, every three hours.

When there is reason to believe that the myocardium is affected in any degree in acute endocarditis, digitalis ought not to be given. The temperature of the room should be kept at between 68° and 72°.

The second case is that of a mulatto girl, twenty-three years old, admitted to the hospital with low delirium; when her mind cleared she stated that she had been ill six weeks previously. The left popliteal space was now swollen, evidently from venous thrombosis, a result of a sluggish circulation. Her tongue was furred, but red at the edges; the abdomen was tympanitic; there were pain and gurgling in the right iliac fossa and diarrhea. At the bases, posteriorly, the percussion-resonance was impaired, and the respiratory murmur was enfeebled; moist râles were heard over the same regions—a result of the feeble circulation. The pulse was small, thready, and hurried; the temperature 104°. She was given quinine, gr. ij., every four hours, by suppository; carbonate of ammonia, gr. v., every three hours, with alcoholic stimulants internally and poultices to the thorax; liquid diet. The abdominal symptoms and the general condition improved; it was thought the patient was passing through the third stage of typhoid fever, when intestinal hemorrhage took place, the temperature rapidly falling, the blood, however, not escaping until twenty-four hours later, when sixteen ounces of dark clotted blood were passed. When intestinal hemorrhage occurs in the course of typhoid fever the temperature falls at the time of bleeding, although the blood, as a rule, does not escape at once. Always suspect this complication when there is a sudden decline of temperature of 3° or 4° F. When intestinal hemorrhage occurs early in the course of typhoid fever it is due to congestion; the epistaxis results from the same cause. When intestinal hemorrhage takes place during the third week, it is due to the opening of a vessel by the ulcerative process in the bowel. After the temperature had fallen below normal, in another day it arose again; two days later another hemorrhage took place and was followed in the course of twelve hours by the evacution of thirty ounces of a dark-brown, watery fluid. The temperature remained depressed after the second hemorrhage and did not rise again; the patient passed into a state approaching collapse, with pinched countenance, feeble pulse and moist skin. When intestinal hemorrhage occurs in the third week of typhoid fever, a condition simulating perforation may develop, with pallor, weak pulse, moist skin, but without pain. When perforation occurs symptoms of peritonitis are developed, with swelling of the abdomen, great tenderness on palpation, rapid pulse and pain. The temperature of the patient had been subnormal for nearly a week, when she ate some candy and fruit, after which the symptoms of relapse appeared. It is generally stated that relapses in typhoid fever do not result from errors of diet, but from a predisposition on the part of the system—in other words, some virus remains latent until its development is excited. The course of a relapse is different from that of the original attack: the onset is sudden and the stage of high temperature is of shorter duration. Certain complications may arise during a relapse. In this case there was developed, over the outer side of the os calcis, enlargement of the bone, localized pain and tenderness, not dependent on thrombosis, but upon periostitis—a rare sequel. As a rule, it is not followed by necrosis. Hemorrhage may occur during a first relapse, but it is rare during a second. The finger-nails become marked by a white line for each attack.

CURRENT LITERATURE.

HAY-FEVER AND EXCESSIVE SNEEZING.

DR. J. E. BULLOCK (*The Provincial Medical Journal*, June 1, 1891) presents a timely paper on the subject of "Hay-fever and Excessive Sneezing." In the treatment of hay-fever the first indication is to improve the general health; as the disease is exhausting, the patient should avoid over-fatigue and should take a nourishing diet; alcohol in any but a moderate amount is to be avoided, as it increases the nasal hyperemia that conduces to the disease. Coffee, as a stimulant, is particularly useful in the asthmatic form, as it is in ordinary bronchitic asthma.

Those who are able should move away from the source of irritation, and in most cases a residence at the seaside, where there is a prevailing wind from the sea, or a sea-voyage, well away from land, is the best means of escaping the irritation. At home, the patient will avoid proximity to pollen grains, and will protect his eyes, either by wearing "goggles" or by staying in-doors in the middle of the day; a veil of "double gossamer" will protect both his eyes and his nose from pollen irritation. In relieving the attacks, opium and belladonna have been found most useful, acting probably by reducing the secretion and diminishing irritation. Tincture of opium, either with or without tincture of belladonna, may be given in five-drop doses twice a day or one-twentieth of a grain of morphine and one-two-hundredth of a grain of atropine, night and morning. Belladonna may be found useful in those cases in which there is irritation in the roof of the mouth, but cocaine lozenges are generally more useful. In persons of nervous temperament the pill of valerianate of zinc and asafetida, as recommended by Sir Morell Mackenzie, is useful as a nerve tonic, to be taken a month or so before the hay season begins. Bromide of potassium and nux vomica will also allay nervous excitability. Antipyrin (ten grains twice a day) has been recommended as an anesthetic to the sensory and secretory nerves of the nose. A solution

of corrosive sublimate (1 : 3000) may be used as a preventive lotion, both to bathe the eyes and also for the nose, either as a spray or by mopping the nostrils with a pledget of cotton-wool. If not too sensitive, the nostrils may be plugged with cotton-wool saturated with the same solution. For the irritation of the eyes, a mild astringent collyrium (such as two grains of acetate of lead in an ounce of rose-water) will give relief. If the itching of the eyelids is troublesome, it will be well to bathe them with a solution of acetate of morphine (two grains to the ounce of water). A drop of a solution of morphine ($\frac{1}{4}$ gr.) and atropine ($\frac{1}{150}$ gr.), dissolved in thirty drops of water, placed in the eye at intervals will afford great relief. Tobacco-smoking is a useful preventive; cigarettes of cubebs are highly extolled by some. Ordinary anti-asthmatic remedies will be found most effectual to relieve the difficulty of breathing. Fumes of niter-paper or of stramonium should be inhaled; the latter may be used either as a dry powder, mixed with other dried herbs, or smoked in a cigarette. Treatment applied to the nose is the main indication in hay-fever, and with the exception of cocaine, all applications should be more or less astringent. A 10 or 20 per cent. solution of the hydrochlorate of cocaine is of service in allaying the irritation accompanying hay-fever, but it should not be too long persisted in. As it soon loses its effect, the strength must be increased, and the subsequent hyperemia leads to an aggravation of the symptoms. Cocaine may be applied either by a spray or on pledgets of cotton-wool. Cocaine lozenges (gr. $\frac{1}{10}$) may be sucked occasionally, especially to allay the itching in the roof of the mouth. Hollow nasal bougies containing cocaine are sometimes useful, but may be too irritating to the hypersensitive mucous membrane. As a substitute for cocaine, menthol (in 10 per cent. or 20 per cent. solution in almond oil, and applied in the same way as cocaine) may be used. An ointment of eucalyptus (one dram to an ounce of vaselin) is a useful sedative ointment.

Insufflations into the nose are sometimes useful. Morphine in some combination is the best powder to use. Acetate of morphine (gr. $\frac{1}{16}$ to $\frac{1}{8}$) may be used either with powdered starch (gr. $\frac{1}{2}$) or bismuth (gr. 1). In the same way ordinary snuff may be taken by men. Strong smelling-salts will sometimes ward off an attack, but only when the irritation is slight. A solution of chromic acid ($\frac{1}{16}$ grain to an ounce of water) is useful as an astringent. The whole interior of the nose should be freely swabbed, or the solution may be sprayed into the nostrils; the application is painful, and cocaine should be used.

In cases of hay-fever the nose should be examined. Certain sensitive spots may be found which excite sneezing on the slightest irritation. These should be treated with the galvano-cautery. A deviation of the septum may require remedy; an exostosis or an enchondroma or excess of tissue, removal.

PATHOLOGICAL CHANGES PRODUCED BY TUBERCULIN.

At the Congress of Internal Medicine, at Wiesbaden, Ziegler, of Freiburg (*Centralblatt f. allg. Path. u. path. Anat.*, Bd. ii., 1891), for Birch-Hirschfeld, presented a pathologico-anatomical discussion on—(1) The changes produced in tuberculous organs by the injection of tuberculin. (2) The question whether these changes led to the healing of the tubercle or to its diffusion or isolation within the tissues. (3) The extent to which previous investigations had proved the healing powers of the injections. He maintained that there can be no doubt that, as a result of the injection of tuberculin, inflammation is set up in the tissues separating and surrounding the tubercles. The degree of inflammation is variable, in some cases being limited to a simple effusion of serum, whilst in others there may be much cellular proliferation, or even suppuration. The inflammation may subside and its products be absorbed. The bacilli are not destroyed, even in the inflamed areas. If the tubercles be situated on the surface, they may be disintegrated and thrown off by the inflammatory process around them, ulcers being left in their stead. The bacilli are not all discharged with the tuberculous material, but may find their way into the neighboring lymph-passages. Tubercles situated beneath the surface, after being disintegrated by the inflammation around them, are either absorbed or encapsulated. The conversion of the tubercle into organized tissue is not possible so long as the bacilli within it are not destroyed, but if the tubercle be disintegrated and absorbed, it may be replaced by organized tissue. Absorption of disintegrated tubercle is, however, accompanied by absorption of the contained bacilli; these may find their way into the lymph-channels, the bloodvessels, or the air-passages, according to the situation of the tubercle. It is therefore reasonable to conclude that the disintegration of the tubercle may lead to the escape of bacilli, but it does not follow that this escape must in all cases give rise to the metastatic formation of tubercles. The bacilli may be rendered incapable of further development by the chemical or other properties of the tissues into which they have made their way. There is no reason to suppose that any immunity is conferred upon the tissues by the injection of tuberculin. If the tubercles become encapsulated, without resorption, even though they still contain bacilli, they are less harmful than those that undergo disintegration. That an actual process of healing is to be observed after the injections of tuberculin is undoubted, and may especially be noted in mucous membranes. It must not be forgotten, however, that inflammatory processes around and about tuberculous nodules are of very common occurrence. They are particularly well marked in intestinal tuberculosis, but may be seen also in the deeper parts of the lungs and other organs when resorption of the actual tubercle has taken place. The changes induced by tuberculin are, in fact, only those that may occur in the natural course of tubercle, but they are brought about more violently and more rapidly and in situations in which in the ordinary course of events they would never occur. Dr. Ziegler expressed the view that both the healing properties and the dangers of the injection-treatment have been overrated. In many of the cases under treatment in which the disease has increased a similar result would soon have occurred independently of the injections, but it is highly probable that in some cases the inflammatory changes following the injections have favored the spread of tubercle. Many observations go to prove that a marked development of bacilli may take place in tubercles undergoing this inflammatory disintegration,

and that in such cases the danger of the escape of bacilli into other tissues is considerable. The action of tuberculin is always limited, and in a case of diffuse tuberculosis is not universally manifest. It would appear that some special conditions of the peri-tuberculous tissues are requisite for the determination of the inflammatory changes. No instance has yet been observed in which as a direct result of the action of tuberculin a tuberculous nodule has become encapsulated.—*Supplement to the Brit. Med. Journ.*, June 27, 1891.

MEDICAL PROGRESS.

Traumatic Detachment of the Placenta.—BOGORODITZKY (*Proceedings of the Tambow Medical Society*, Nos. 9, 10 and 11, 1890) reports the case of a healthy woman, twenty years old, in the fourth month of pregnancy, who, one night, "for amusement," threw a somersault in bed. Immediately after, she was conscious of pain in the abdomen, which moderated, and the woman fell asleep. On the next morning, however, she awoke with increased pain, a feeling of weight in the abdomen and general prostration. Soon there set in obstinate constipation (that did not yield to enemata or purgatives), violent vomiting, fever, dysuria and retention of urine. Two weeks later she appeared anemic and collapsed; the pulse was quick and weak, the abdomen distended and tender, the uterus flabby, its fundus reaching about three fingers' breadth above the umbilicus, the cervix displaced backward, the os admitting a finger. Intra-uterine hemorrhage being diagnosticated, hot vaginal douches were given, an ice-bag applied to the abdomen, ice, stimulants and ergot administered. At the end of four hours a dead four-months' fetus was expelled; but the uterus remained as large as ever. On further examination, the organ was found to contain a smooth, globular body, of the consistency of the placenta. The membranes and placenta being ruptured, the finger entered an enormous cavity filled with an immense volume of fluid and clotted blood. After the removal of the membranes, clots and blood, the uterus contracted and hemorrhage ceased. The after-treatment consisted in hot, disinfectant irrigations and the internal administration of ergot and quinine. Notwithstanding the formidable loss of blood, an excellent recovery followed. On the fourth day the temperature was normal; on the tenth day the patient got out of bed.—*Provincial Medical Journal*, July 1, 1891.

Intravenous Injections of Soda in Anemia.—CASTELLINO (*Gaz. d. Ospit.*, No. 20), at the clinic of Maragliano, at Genoa, has studied in cases of anemia the results of intravenous injections of from fourteen to sixteen ounces of a ¾ per cent. filtered solution of soda. The injections were well borne, though sometimes followed by slight fever. An hour after the injection the number of red cells and the percentage of hemoglobin were reduced. This oligemia was transitory and proportional in degree to the quantity of fluid injected. At the end of from ten to twenty hours a decided increase in the number of blood-plaques and in the number and resistance of the red cells had taken place; the red corpuscles were, however, still pale; the hemometer detected little variation. In the course of four or five days the increase in the number of red cells became more conspicuous, the percentage of hemoglobin remaining stationary. During this period the red corpuscles showed greater resistance to the serum than they did previously. At the end of from thirty to forty days the good effects of the injections had disappeared. In three cases the serum, which before injection had, on spectroscopic examination, contained a considerable quantity of hematin, became clear after injection. In a case of chronic malarial fever of quotidian type the injection was followed by a decline of 2° in temperature. Good results attended the injections in a case of intense chloremia and in one of purpura simplex. In both, the number of red corpuscles became doubled, the general condition improved, and there was an increase in body-weight.—*Wiener klinische Wochenschr*, June 4, 1891.

Sacral Hysterectomy.—TERRIER (*Wiener med. Presse*, July 12, 1891), at the French Congress of Surgery, reported two cases in which he performed sacral hysterectomy. One was in a woman fifty-two years old, with extensive carcinoma of the body of the uterus, and with a narrow, resistant vagina. Vaginal extirpation was out of the question, so that the uterus was removed by the sacral method. The woman recovered without a recurrence of the neoplasm.

The second case, in a woman fifty years old, with intra-uterine carcinoma, terminated fatally. Terrier emphasizes the fact that the ureter is more likely to be injured in sacral than in vaginal or abdominal hysterectomy. He considers vaginal hysterectomy the normal operation, and the sacral method as indicated only when the vagina is narrow and not distensible, when the uterus is voluminous, and when lateral adhesions exist or the broad ligaments are carcinomatous. The operation is a difficult one.

ROUX considers the sacral operation only exceptionally indicated, to be reserved for massive carcinomata. By performing temporary resection of the sacrum, injury to the ureters is not possible. Of ten cases operated on, Roux has lost but one, in which a removal of portions of the bladder and ureter was necessary.

Congenital Rickets.—At a meeting of the Section on Orthopedic Surgery of the New York Academy of Medicine, DR. T. HALSTED MYERS presented a case of marked rickets, in which it was stated by the mother that the greatly enlarged epiphyses of the tibiæ, femora and radii were present when she first examined the child a few days after birth. The sternum at that time was also abnormally prominent. The mother had been in good health during the gestation; the father was also healthy. No specific history could be obtained. The child, six years of age, presented all the deformities of rickets in a marked degree, except that the head was well shaped and that there was a marked increase of the normal dorsal curve of the spine, rather than the dorso-lumbar kyphosis usually found in these cases. An unusual degree of permanent knee and hip-flexion also existed, and the patient, when resting, assumed the hand-to-knee position of Pott's disease. The epiphyseal tenderness seemed to indicate an active stage of the disease. After being nursed nine months, the child had a mixed diet, not especially starchy or lacking in animal fats.

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SATURDAY, AUGUST 15, 1891.

THE CONGRESS OF TUBERCULOSIS.

In another part of the current number of The News will be found a preliminary report of the recent Congress of Tuberculosis, held at Paris. If there is one thing, above all others, to be learned from the many discussions upon the well-worn but still obscure subject of tuberculosis, it is that the bacillus alone does not constitute the disease. The host is obviously not the least important element. That human tuberculosis is not inoculable in all animals, and that all susceptible animals are not equally susceptible, must be a sufficient demonstration of this point. As the bacillus thrives well or ill on various artificial nutrient media, so in the animal organism does it require a suitable soil for its growth and development. What these conditions are, as well as what part the bacillus directly plays, and what influence the products of its vitality exert, we do not as yet know. These are all matters for further investigation.

Prudden and Hodenpyl (*New York Medical Journal*, June 6 and 20, 1891) have demonstrated that dead, sterilized tubercle bacilli injected into rabbits are capable of setting up a process apparently identical with miliary tuberculosis, but unattended with the retrograde changes that result in caseation and softening. We do know, however, that we can accomplish most in the treatment of tuberculosis by improvement of the general nutrition, and it is universally admitted that the accomplishment of this end is facilitated and promoted by a suitable selection of climate for residence.

We do not mean to belittle the significance of the bacillus of Koch in the etiology of tuberculosis, but desire to emphasize the importance of other conditions that must be considered as concomitant and not as secondary or subordinate.

"The prophylaxis of tuberculosis must begin before birth." The system must be rendered impregnable to the invasion of a disease-agent that is practically omnipresent. The invasion once accomplished, the struggle is an unequal one; the enemy once intrenched, his expulsion is a matter of difficulty; the only hopeful means of conquest must be on the lines of physiological resistance. The soil must be rendered sterile. A healthy condition of tissues and fluids best fulfils the indication, in that it is antagonistic to bacterial growth and activity.

Not much, we fear, is to be expected from vaccination experiments. Tuberculosis, unlike smallpox and its congeners, is not a disease of which one attack confers immunity from subsequent attacks. On the contrary, one who has already had the disease shows a special predilection to reinfection.

EMPLOYMENT FOR THE INSANE.

A visit to an asylum for the insane is for a normally minded person one of the most distressing things in the world. And this is so not because of the evidences of aberration of mind, but largely or entirely because of the mental, moral and physical wrong done the poor souls there incarcerated by their enforced, continuous, maddening idleness. Hour after hour, day after day, week after week, month after month, they have nothing to do but to eat their own hearts. As a little outlet for mere physical energy, often pathologically superabundant, they can only pace back and forth like caged animals, or sit and sway their bodies and pursue the phantoms of their morbid imaginations. It is a horrible sight, and it is a marvellous thing that any recover. The simplest promptings of pity would dictate giving these uselessly busy fingers something useful to do, and furnishing these active minds some other occupation than that of feeding upon themselves. Could anyone resist morbidity of mind, and even insanity, if compelled to sit thus brooding and inactive for

years? What a prophylaxis is work against mental disease! There can be no question that some insane could not or would not do any work, but it is still more indubitable that to the vast majority proper work would be an inexpressible blessing and powerful adjuvant in treatment. The system would have to be instituted with care, guarding against cruelty, improper tasks, etc.; but because life has always been synonymous with activity and interest, such a system must fall in with the order of Nature, and finally yield beneficent results.

As an instance of the success of such a movement may be cited the "Hospice St. Jean de Dieu," at Dinan, France, where a marked peculiarity of the treatment of the insane is their judicious employment. A correspondent of the New York *Post* says of his visit to this hospital:

"I was especially impressed with the contentment (one might easily use a stronger word) visible in the faces of the many patients whom I saw busy in the quarry, and the orchards, and the hay-fields. (The grounds of the asylum cover 126 acres, and are worked almost entirely by the patients under the direction of the Brothers.) 'Yes, they are almost happy,' the Prior said in answer to my exclamation of surprise. 'A great number are peasants who have been accustomed all their lives to hard work, and whose condition would be seriously aggravated by idleness. Their contentment is the result of life in the open air, and of occupation which distracts their troubled thoughts, but most of all it comes from the sense of *being trusted.*'"

At Gheel, in Belgium, similar methods of treating the insane have long been in use. Dr. Wm. J. Morton, after a visit to this colony, says:

"Gheel teaches us the possibilities that exist in the treatment of the insane. It shows us that they will work cheerfully if well managed, and that they may be treated, under proper precautions, with great liberty, and not abuse it. It teaches us, moreover, how wofully wide our advanced civilization is from the mark it might attain to in the treatment of insanity."

And there is another phase of the matter that should not be lost sight of. All problems, whether of the mind, the body, or of society, have a financial aspect, and in our modern life this is fast becoming more and more dominant. When we ponder upon the ominous fact that the number of the victims of mental diseases is increasing faster than the general population; when we think that already in the United States we have about 100,000 insane[1] that are supported by public charity, and that the financial burden, amounting to many millions of dollars annually, is levied upon the sane workman outside of the hospitals—when we reflect upon these things we then see that to the mental, moral, and therapeutic injury done the patient by corroding idleness there is added a financial wrong done the community by the same patent and potent evil. By allowing the patient to contribute to his own support a double good would result, instead, as from the present system, a double wrong.

[1] An increase of about 60 per cent. in ten years!

REVIEWS.

Fever: Its Pathology and Treatment by Antipyretics. Being an Essay which was Awarded the Boylston Prize of Harvard University, July, 1890. By Hobart Amory Hare, M.D., B.Sc. Pp. 162. Philadelphia and London: F. A. Davis, 1891.

The title originally adopted by Dr. Hare for this dissertation—*The Uses and Values of Antipyretics*—which we believe he was compelled to abandon in order to enter it for the Boylston Prize, far better describes its scope than that under which it is now published. It is, in reality, a description, from both the experimental and clinical standpoint, of the more modern antipyretics, based on laboratory and hospital investigations. The effects and utility of these antipyretics in the management of febrile and non-febrile ailments are detailed, and the published untoward results arising from their employment in various affections are cited and arranged in very convenient tabular form. The work, like all that proceeding from the fertile brain and pen of Dr. Hare, is well done. It furnishes a most excellent *résumé* of the physiological action and therapeutic uses of the drugs considered. We regret that it should be published with so misleading a title.

Lectures on Tumors, from a Clinical Standpoint. By John B. Hamilton, M.D., LL.D., Professor of Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. For the Use of Students. ("Physicians' Leisure Library.") Detroit, Michigan: George S. Davis, 1891.

This little work is one of a class of books that a conscientious critic greatly dislikes to review. Every page contains so many errors, both of fact and of methods of expressing facts, that little remains for the critic but general condemnation—and general condemnation is pleasant neither to give nor to receive. This is especially true in the present instance, in which the author's name would presumably have been a guarantee of better literary work, and that of the publisher a guarantee of typographical products not positively abominable. As instances of the latter class we cite a few words: "discrasia;" "a sarcomata;" "psammona;" "myroma: synonym, cartilaginous tumor;" "pelvic hæmotoma do not differ;" "pudenta and pudental;" "parenchymata;" "dernier resort;" "tic douloreux;" "usualy."

Plain Talks on Medical Electricity and Batteries. By Horatio R. Bigelow, M.D. Pp. 85. Philadelphia: P. Blakiston, Son & Co., 1891.

Dr. Bigelow's *Plain Talks* consists of excerpts from the works of a number of recognized authorities on electricity. The author lays no claim to originality. The compilation as such is a good one, but the work suffers by contrast with the more original one of Adams. The therapeutic index, useful for ready reference, is the best feature of the book.

SOCIETY PROCEEDINGS.

SECOND CONGRESS OF TUBERCULOSIS,

Held in Paris from July 27 to August 2, 1891.

The second Congress for the study of Tuberculosis in man and animals was officially opened on Monday, July 27th, at the Medical School of Paris, under the presidency of Dr. Villemin, who was the first to demonstrate experimentally the contagious character of tuberculosis. Among the members present were Pasteur, Charcot, Cornil, Brouardel, Lannelongue, L. H. Petit, etc.; Jacobi and Page, from the United States; Watson, from England; Semmola, from Italy; Metschnikoff, from Russia; in fact, every European country was well represented. In his opening address, President Villemin presented an historical sketch of tuberculosis, both clinical and bacteriological, mentioning the different treatments proposed during the last few years, and concluded by saying that for many years to come we shall have to be satisfied with partial success.

Prof. Verneuil then read a paper on "Emigration, or Change of Place of Residence, in the Prophylaxis or Treatment of Tuberculosis." The paper was arranged in a series of paragraphs, which can be summarized as follows: 1st. Change of residence has a decided influence on the development, rapidity, and termination both of medical and of surgical tuberculosis. 2d. The change may be either from the city to the country or from the country to cities; the former exerts a favorable influence upon the course of tuberculous disease, while the latter favors the appearance and progress of tuberculosis. 3d. These two facts, well established by clinical observation, are of capital importance as to the prophylaxis and treatment of tuberculosis. Dr. Verneuil insisted that the patient be informed by the physician that by sacrificing himself and not going to the country he will rapidly reach the end of his disease, while an early change of residence may entirely eradicate the trouble. It is not absolutely necessary that a patient be sent to the country; should he live in a large city he may be sent to a smaller city, the location and sanitary condition of which are better than the large and crowded city. A stay in the country is most serviceable in many forms of local surgical tuberculosis, such as ulcers, fistulæ, articular diseases; also in case of latent tuberculosis or of recent operation. When a patient has been sent from the city to reside in the country, he ought not to be allowed to return to his former residence before the results of a careful physical examination indicate that the return can be made with impunity. Unfortunately, fixed rules cannot be laid down, yet a change of residence made in childhood or in adolescence ought to be prolonged until adult life has been reached; a patient ought not to be allowed to return unless his disease has at least been stationary for some time, or has preferably undergone decided improvement.

As is well known, tuberculosis is much more common in cities than in the country. It is also much more rapid and serious in cities, and certainly does not subside in as large a proportion of cases and as rapidly as in the country; we in the city constantly see mild forms of tuberculosis that have a tendency to perpetuate themselves and to reach an alarming intensity, while the contrary is observed in the country; again, serious tuberculosis is almost always fatal in a city, but, in the country, cures have been reported; the average life of city tuberculous patients is certainly much lower than that of country tuberculous patients; finally, Verneuil concluded his communication by emphasizing the great service country physicians can render by forbidding tuberculous patients to live in cities while they still present the slightest evidence of tuberculous disease.

Prof. Grancher and Dr. H. Martin next read a "Note on Anti-tuberculous Vaccination." They first passed in review the question of the duality of tubercle-bacilli, which has been a point of discussion for several years past; two kinds of tubercle bacilli are now cultivated: the human tubercle bacillus and the tubercle bacillus of birds. Koch admits that these two kinds of bacilli are different, but very slightly so; while MM. Straus and Gamaleia think that they are two absolutely different species; Cadiat, Gilbert and Roger believe in the unity of the bacilli. The experiments of Grancher and Martin have been made with both bacilli of birds and human bacilli; but the rabbit, which has been the animal experimented upon, is sensitive to both, and perhaps more so to that of birds than to that of man, so that, from a scientific point of view, the results as to immunity obtained against the most virulent of bird-tuberculosis by total or partial vaccination hold good for human tuberculosis. Grancher and Martin think that these bacilli are two varieties of one species. They are partial unicists.

The dualists base their opinion on the different aspects of the cultures; on the different pathogenic action of the two bacilli; on the immunity of the dog to the bird-bacillus and the immunity of the hen to the human bacillus.

As regards the cultures: Bird bacilli cultures, it is true, are often moist and soft and more or less wrinkled, while human bacilli cultures are dry and verrucous, but Grancher and Martin have often seen bird-bacilli cultures dry and verrucous and human bacilli cultivated on glycerin agar-agar soft and wrinkled; they have in their laboratory two fresh cultures of both bacilli which cannot be differentiated.

As regards the difference in the pathogenic action: With bird tubercle bacilli one can obtain any form of tuberculosis desired, from the infectious type of Yersin to the localized or benign tuberculosis of articulations.

As regards the immunity of the dog to bird-tuberculosis and of the hen to the human bacillus, this proposition falls to the ground, for hens have recently been infected with tubercle bacilli from human beings and dogs with bacilli from birds.

Grancher and Martin have conducted their experiments as follows: Rabbits weighing about two kilograms (4½ pounds) are for several weeks kept at the laboratory before being used. The same quantity of an opalescent culture in a little sterilized water is always used for inoculation; during the course of the experiment the vaccinated rabbits and the control-rabbits are given the same food, an important matter in such experiments. Each animal is weighed regularly every two or three days and the cage is kept clean and sterilized; even with these precautions small epidemics of enteritis and pneumonia are encountered, especially when animals are kept under observation for one or two years—and this long period is necessary if one wishes to learn the limits of the conferred immunity and not confuse partial with ultimate results; finally, the conclusive inoculation is made directly in the blood with the most virulent virus.

Grancher and Martin stated, as a curious and interesting fact, that as long ago as in 1888 they made experiments with a kind of "tuberculin" prepared by Martin, which somewhat resembled that of Koch; it was prepared as follows: A culture of tubercle bacilli in chicken broth with 6 per cent. of glycerin and 6 per cent. of sugar was filtered through clay. The filtered liquid is reduced to one-fourth of its volume by evaporation in a water-bath, and kept in a sterilizer at 120° C. (248° F.); the resulting liquid somewhat resembles "tuberculin" in its physical properties; it is also a glycerin extract of pure tuberculous cultures. All experiments made with the soluble products appeared to diminish rather than to increase the resistance of rabbits to the test-inoculation, so that these experimenters have given up further experiments with tuberculin to follow the antirabic inoculation method. Pasteur takes dried virulent cords; the authors have allowed their cultures to remain in tubes hermetically sealed, and in this manner the cultures become attenuated, and from month to month lose more and more of their virulence; these attenuations have been continued for a period of three years. A single injection of the virus, numbered ten, which is three years old, injected into the veins of a rabbit, is harmless. If the injection is several times repeated, the animal will die from tuberculosis.

The virus numbered one is from a fresh culture on glycerin agar, fifteen days old, which, injected into the veins of a rabbit weighing 2 kilograms, kills in from 15 to 20 days; sometimes the animal survives for 25 or 30 days, or it may die on the 11th or 12th. The lesions found are those described by Yersin.

The virus numbered two, three, and four, respectively injected, is fatal after a time that varies from 2 to 6 months; with that numbered five, six, and seven, death is not certain, but probable.

The following experiments were performed: On November 26, 1889, 9 rabbits were inoculated and 4 control rabbits were not. Each of the former received into the veins of the ear 1 c.c. of an opalescent dilution of tubercle bacilli, progressively more and more virulent. The 1st and 2d inoculations were made with a culture 33 months old; the 3d with a culture 22 months old, and so on, until all the rabbits were treated; the control-rabbits now, for the first time, received a culture of 4 months, corresponding to the virus numbered two. The four control-rabbits died, tuberculous, on the 23d, 27th, and 29th days after the test-inoculations, respectively, the last dying on the 154th day.

Of those vaccinated, one died, tuberculous, before the last inoculation was given; another died a few days after the last inoculation, while the others have lived a long time, some dying accidentally on July 19 and November 18, 1890, and January 29 and April 4, 1891. At the autopsy no trace of tuberculosis could be found, yet one rabbit was suffering from parenchymatous nephritis, while the last animal of this series still lived 21 months after the first vaccinal inoculation; he weighed 4.350 kilograms (9½ pounds), while his starting weight was 2.60 kilograms (4½ pounds).

It will be noticed that the control-animals died at variable periods—on the 23d, 27th, 29th, and 154th day of inoculation, yet they all received the same dose of the 4 months' old culture of the virus numbered two; this interesting fact is quite explicable, for if one had employed the pure fresh culture after a definite period, all these rabbits would have died almost on the same day; but the 4 months old culture had already been attenuated, and here comes into play the degree of resistance offered by each individual; and the idiosyncrasy of each animal has to be taken into account; one rabbit will resist for one month and another for six.

It will also be remarked that a rabbit died during vaccination and before the test-inoculation was made; this was due to the mode of inoculation employed; intravenous injection makes such complications possible, which are done away with, however, when the subcutaneous method is employed.

Another series of experiments by the subcutaneous method was begun on August 30, 1890. Each of 8 rabbits received 11 vaccinal inoculations until the virus numbered two was reached. Three that received, on December 8th, into the vein of the ear injections of human tuberculous virus, carefully admixed with the pulpified spleen of tuberculous guinea-pigs, remained in excellent health; they weighed 3.600 kgms., 3.500 kgms., and 3.800 kgms., each having gained 1000 grams. The control-animal died in the course of seven months, his body being stuffed with tubercles. This experiment proves that the bird-tubercletbacillus has the power of rendering the rabbit immune to the human bacillus.

In the first series of experiments, several of the rabbits died from intercurrent diseases, but no trace of tuberculous virus could be found, notwithstanding the enormous quantity of virus received.

One of the rabbits died from glomerulo-nephritis, which, according to Professor Grancher, is a very common affection in rabbits inoculated with tuberculous virus. Strange to say, the rabbits that die from that disease increase in weight after inoculation. In a series of 11 rabbits and 2 control-animals, the experiment being concluded on April 10th with an injection of the virus numbered one, the two control-animals died on the 3d and 10th of May respectively; while 8 of the others died from nephritis, without the slightest tuberculous lesion of either the kidney or any other organ; the three others died from pulmonary tuberculosis, but of a modified form; still all those rabbits lived for from 3 to 8 months, which certainly indicates that they had been favorably influenced by the virus.

Another interesting fact is that a vaccinated animal may

increase in weight from 2 kgms. to 3, 4, and 5 kgms., and die subsequently from a limited osseous or articular lesion; this enables Grancher and Martin to substantiate what they had already advanced, namely, that the longer the disease lasts the greater is its tendency to be benign and local.

Finally, the conclusions of this very interesting paper, the result of observations in eighty-two rabbits, is as follows:

Complete immunity to tuberculosis has not been conferred upon rabbits; the important fact has been determined that tuberculous virus has a vaccinal action against tuberculous virus itself.

Anti-tuberculous vaccination is imperfect, but does exist. Again, the tuberculous virus employed contains a vaccinal substance and a toxic one, the last being the cause of the nephritis developed, while the first confers a more or less prolonged immunity to infection. If the vaccinal virus have been varied, the results have varied, which is an indication of the efficacy of the virus employed.

The next communication made was by MM. ARLOING, RODET and COURMONT on, "Experimental Studies of the Properties Attributed to Koch's Tuberculin." These experimenters tested the three principal properties attributed to Koch's remedy—its curative value, its diagnostic value and its preventative property. They were unable to produce an acute intoxication, even by using large doses; on the contrary, frequently repeated small doses produced a sort of chronic intoxication.

A rise in the temperature is one of the most conspicuous symptoms; it is preceded, however, by a prodromic stage, which seems to indicate that this rise is not directly produced by tuberculin, but probably by a heat-producing substance, which gradually forms under the influence of tuberculin. As to its diagnostic value, experience has shown that it is not infallibly to be relied upon.

From a therapeutic point of view these authors have found Koch's remedy useless in the case of bird, bovine or human tuberculosis in animals. Finally, these experimenters attempted to verify the assertion of Koch, made at the International Medical Congress, that the guinea-pig was rendered immune to tuberculosis by treatment with tuberculin; they found, on the contrary, that in many cases the guinea-pigs were thus rendered much more susceptible to tuberculous lesions; in fact, that the lesions were much more confluent.

Finally, the day session was closed by a report of the librarian of the Faculty of Medicine of Paris, Dr. L. H. Petit, who is the General-Secretary of the Congress, and who gave a clear and interesting account of the work done and the results obtained by the last congress on tuberculous.

(*To be continued.*)

CORRESPONDENCE.

THE MEDICAL DEPARTMENT OF THE INTERNATIONAL ELECTRICAL EXHIBITION AT FRANKFORT-ON-THE-MAIN.

THE purpose of the International Electrical Exhibition at Frankfort-on-the-Main is to display all the latest advances and improvements in electrical science, and to stimulate to new efforts and further progress. The exhibition offers many points of interest, to medical nme in particular. In a hall built especially for medical and scientific purposes are to be seen the latest inventions in electro-diagnostic and electro-therapeutic appliances. It would be quite superfluous to go into the details of the exhibits, but it is worth while to take a cursory view of them.

The electromotor power of the various apparatuses is derived from many sources—from various kinds of galvanic batteries, from the currents produced by large dynamos, and from accumulators. Batteries of the latter kind are made of convenient size, and are easily transportable; they can be highly recommended for purposes of illumination, as they furnish a most constant light, and can at small outlay be introduced where no other arrangements for the production of electric light exist.

The contrivance of Dr. Bröse, of Berlin, first introduced last year, by which all medical instruments can be connected with the wires that conduct from the central station currents for illuminating or for mechanical power, is quite successful. The current enters the branch wire with a force of about 100 volts, and must, of course, be weakened for medical purposes. The weakening is accomplished by means of a rheostat that regulates the maximum current introduced into the circuit; by means of a second rheostat the current can be regulated to a nicety. In this manner a galvanic current of any intensity, from a fraction of one milliampère to several hundred milliampères, as may be needed for the purposes of electrolysis, can easily be obtained. The apparatus is perfect in action, and as it can be used without danger, there is no doubt that it has for medical purposes, a great future before it. The current is absolutely constant, and the disagreeable and inconvenient galvanic elements can now be dispensed with. The apparatus has also the great advantage that the cost is very small, and that it can be employed in any house in which electric lighting is in use.

The current from the central station may also be used for galvano-caustic purposes, and is most decidedly to be preferred to the current produced by elements.

Galvanic elements are exhibited in every conceivable form and in the highest degree of perfection, for the purposes of constant as well as inductive apparatus, electrolysis, galvano-caustic appliances, electric baths, and lighting.

The electromotors have been used in the medical section to provide the motive power for frictional machines, as well as for drilling-machines in the dentist's room.

The various lighting apparatuses, of which a great number is exhibited, claim particular attention. As especially worthy of notice may be mentioned the illuminating apparatus for investigating the cavities of the forehead and upper jaw, made in the smallest forms; it promises to be of great value in the diagnosis of tumors, as well as of accumulations of pathological collections in the cavities mentioned. Several dark-rooms have been prepared in order to test the apparatus.

It is needless to say that the latest improvements in galvanometers, rheostats, induction apparatus, etc., are to be seen.

As being particularly interesting, may be mentioned

the apparatus designed by Dr. Carl, a well-known oculist of this city, by means of which the refraction of the eye can be ascertained with great ease and in a short time. The instrument is so constructed that only single letters are seen. They appear in a vertical slit on a white disc, alternately in the upper and lower parts.

Quite apart from its great intellectual interest, the exhibition is worth a visit.

In the course of the summer, a congress of German physicians for nervous diseases will be held for the purpose of preparing the way for a purely scientific method of electro-therapeutic treatment.

NEW METHODIST HOSPITAL MEDICAL STAFF.

To the Editor of THE MEDICAL NEWS,

SIR: As many rumors have drifted to my ears concerning criticisms of the recent medical elections at the new Methodist Hospital, it seems but right to myself and to the hospital to make the following statement:

There were 30 candidates for the positions upon the medical staff, the schools of graduation being as follows: Woman's Medical College, 3; Jefferson Medical College, 3; University of Maryland, 2; University of Pennsylvania, 22.

Under the opinion given to the Board of Trustees by their solicitor, the will of Dr. Stewart, the founder of the hospital, required that no person should be elected upon the medical staff who did not have the title of A.B. from a college or university. As this title is one that is by almost universal custom only given after examination, it was not considered, by most of the trustees at least, that persons who had received the title from some small college by gift were within the limits contemplated by Dr. Stewart. The High School of this city has the legal right to give the title of A.B., but the solicitor did not consider that it could fairly be considered a college. Under this and other restrictions in the will of Dr. Stewart, not necessary here to detail, the trustees found that no candidates from the Woman's Medical College or the Jefferson Medical College were eligible, and that of the other candidates, only one coming from the University of Maryland and eleven from the University of Pennsylvania were within the terms of the will. Under these circumstances, they elected for physicians Drs. J. H. Lloyd, R. C. Norris, and F. A. Packard; for surgeons, John B. Roberts, H. R. Wharton, H. H. Kynett, and W. C. Hollopeter. One vacancy was left in the medical staff proper.

The above statements are based upon an analysis made by the Rev. Dr. McConnell, Secretary of the Board of Trustees, from information furnished in response to inquiries by the candidates themselves, and is, I think, entirely accurate, excepting in that Dr. John B. Roberts graduated at the Jefferson College before he took his degree at the University of Pennsylvania.

Yours truly,
H. C. WOOD, M.D.

1925 CHESTNUT ST, PHILADELPHIA, PA.,
July 18, 1891.

Dr. Victor C. Vaughan has been elected dean of the faculty of the medical department of the University of Michigan.

NEWS ITEMS.

Joseph Eastman, M.D., LL.D.—The degree of doctor of laws has been conferred by the Wabash College, of Crawfordsville, Ind., upon Dr. Joseph Eastman, president of the faculty and professor of the diseases of women and abdominal surgery in the Central College of Physicians and Surgeons, of Indianapolis.

Dr. Henry V. Wilson, recently in charge of the United States Fish Station at Wood's Holl, Massachusetts, has been elected professor of biology in the University of North Carolina. He will at the same time be Assistant Shell-fish Commissioner for the State, and scientific expert to the Commission.

Artificial Feeding of Infants.—The Société Médicale des Hôpitaux offers a prize of 1200 francs ($240) for the best essay upon the Artificial Feeding of Infants. Papers in competition must be in the hands of the secretary of the Society before the first of July, 1892.

Dr. H. M. Whelpley, professor of microscopy in the St. Louis College of Pharmacy, has been elected professor of physiology and histology, director of the histological laboratory and secretary of the Missouri Medical College.

The Alvarenga Prize for 1891, of the College of Physicians of Philadelphia, has been awarded to Dr. L. Duncan Bulkley, of New York, for his essay on Syphilis Insontium.

Nathan Bozeman, M.D., LL.D.—At its recent commencement the University of Alabama conferred the degree of doctor of laws upon Dr. Nathan Bozeman.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 4 TO AUGUST 10, 1891.

GIRARD, ALFRED C., *Major and Surgeon.*—Relieved from duty at Fort Niagara, N. Y., and ordered to Fort Sheridan, Ill., for duty.

SKINNER, JOHN O., *Captain and Assistant Surgeon.*—Assigned to duty at Fort Clark, Texas.

BRADLEY, ALFRED E., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for thirty days.

KNEEDLER, WILLIAM L., *Assistant Surgeon.*—The leave of absence granted is extended one month.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 8, 1891.

MARMION, R. A., *Surgeon.*—Detached from the Navy Yard, Norfolk, and ordered to the Navy Yard, Boston.

WINSLOW, G. F., *Surgeon.*—Detached from Marine Rendezvous, Boston, and ordered to the Navy Yard, Norfolk, Va.

PARKER, J. B., *Surgeon.*—Detached from the Navy Yard, Boston, and placed on waiting orders.

BRAITHWAITE, F. G., *Assistant Surgeon.*—Ordered to the Receiving-ship "Wabash," at the Navy Yard, Boston.

URIE, J. B., *Assistant Surgeon.*—Detached from the Receiving-ship "Wabash," and ordered to the Marine Rendezvous, Boston.

CORDEIRO, F. J. B., *Passed Assistant Surgeon.*—Detached from the Naval Hospital, Chelsea, Mass., and granted two months' leave of absence.

PICKERELL, G. MCC., *Passed Assistant Surgeon.*—Detached from Hospital, New York, and ordered to Hospital, Chelsea.

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ORIGINAL ARTICLES.

HEPATIC ABSCESS AND THE AMŒBA COLI.[1]

BY JOSEPH EICHBERG, M.D.,
PHYSICIAN TO THE CINCINNATI HOSPITAL.

OUR knowledge of the direct, essential causes of disease is all too limited. The past few years have witnessed some important additions to this obscure department of medicine, and more promise to follow. We are indebted to the microscope for many of the more recent acquisitions in this field, of which the case I herewith report is an illustration. The case is of interest, because the results of investigations upon the relation of the amœba coli to abscess of the liver are not as yet sufficiently appreciated by the body of the profession; and all additional testimony can but serve the purpose of carrying conviction more deeply to doubting minds. The patient entered my service at the Cincinnati Hospital, and I am indebted for the following complete notes to Drs. Morris and Landis, internes of the medical and surgical wards respectively:

H. B., thirty-five years old, colored, a laborer, of good physique, married; was admitted to the medical ward of the Cincinnati Hospital December 13, 1890. His father is said to have died of phthisis; a brother of pneumonia. The patient had had pertussis, measles, rheumatism, malaria, orchitis and chancre.

In June the patient was suddenly seized with pain at the base of the right lung. The appetite was impaired; he had night-sweats; he was extremely debilitated. In a short time he began to improve, but was not able to resume work, and steadily lost strength and flesh. There was also cough, that steadily grew worse, with free, bloody, muco-purulent expectoration. Two days before admission, shortness of breath became decided, cough became much worse, with pain in the right side. The man had been confined to bed for two months.

On admission to the hospital sleep was disturbed, and there was still some pain in the right side. The cough was frequent, the expectoration muco-purulent and bloody. The appetite was poor; the bowels regular. The pulse was 108; the temperature 99°. There was edema of the feet and lower extremities. Micturition was normal. The urine was of amber color, of acid reaction, of a specific gravity of 1030, and contained neither albumin nor sugar. The patient was very well developed and well nourished. The tongue was pale, the throat normal. The chest was well formed; the respiratory movements were limited upon the right side. Over the liver the intercostal spaces were obliterated, with bulging of the chest; the respiratory movements were accelerated (30 per minute); expiration was prolonged; there was some supra-clavicular retraction; there was percussion dulness over the whole right lung anteriorly, and slight dulness posteriorly, increasing from above downward; at the apex the resonance was fairly good; at the base there was flatness. There was dulness on percussion over the lower lobe of the left lung, anteriorly and posteriorly. On auscultation of the right lung, tubular breathing, with moist râles, was heard in the upper lobe, with gradual diminution of the sounds downward, until at the base the sounds were distant and blowing in character. In the left lung, moist râles and tubular breathing were heard in the lower lobe; sonorous râles in the upper lobe. Vocal fremitus was markedly diminished over the lower lobe of the right lung, and increased over the remaining portion of the right lung and over the left lung. The apex-beat was seen in its normal position; no abnormality of the heart was detected. The abdomen was somewhat distended; the increase in size had been noticed for a few days. No abnormality in the abdominal viscera was detected; a moderate collection of ascitic fluid was present. The feet and legs were edematous, pitting on pressure. The swelling had appeared at intervals during the previous two months. The existing swelling had been present for a week. The patient had external hemorrhoids.

A diagnosis of phthisis, lobular pneumonia and pleurisy, with serous or purulent effusion, was made.

Despite energetic treatment with whiskey, ammonium carbonate, morphine, phenacetin, iodoform suppositories, Hope's mixture, paregoric and aspiration, the patient failed to improve; cough and hemoptysis persisted; inability to sleep was troublesome, and diarrhea set in.

On December 20th Dr. P. S. Conner saw the patient in consultation, and consented to perform paracentesis, and to have the patient transferred to his service. With his permission I append the remaining notes, made during the patient's stay in the surgical wards: An incision two inches long was made in and parallel with the seventh intercostal space in the axillary line. A quantity of bloody fluid was evacuated, apparently containing pus, but unlike the material evacuated in the orginal aspiration. On passing the finger into the chest extensive and firm adhesions were found, apparently separating this fluid from more above. An incision, one inch in length, was accordingly made in the sixth intercostal space, and a large quantity of thick, greenish pus and bloody

[1] Read before the Cincinnati Medical Society, February 3, 1891.

fluid of disagreeable odor was evacuated. A large drainage-tube was introduced into the upper incision, the lower was drained with an iodoform-gauze stuffing, and dressed with bichloride gauze and cotton. The patient felt greatly relieved by the operation, and had much less difficulty in breathing. Cough and diarrhea, however, continued.

On December 30th the appearance of the patient was bad; emaciation was marked; a peculiar odor emanated from the body, and could be noticed at a distance of ten or twelve feet. On the following day the patient became much worse, sank rapidly, and died.

Temperature, pulse and respiration pursued the following course:

December 14. A.M., temperature, 99.6°; pulse, 120. P.M., temperature, 103.4°; pulse, 132; respiration, 36.

15th. A.M., temperature, 100°; pulse, 120; respiration, 36. P.M., temperature, 100.8°; pulse, 120; respiration, 36.

16th. A.M., temperature, 99.4°; pulse, 120; respiration, 30. P.M., temperature, 99; pulse, 126; respiration, 30.

17th. A.M., temperature, 100.6°; pulse, 120. P.M., temperature, 103; pulse, 126.

18th. A.M., temperature, 101.2°; pulse, 120. P.M., temperature, 102.8°; pulse, 126.

19th. A.M., temperature, 100.4°; pulse, 120. P.M., temperature, 100.6°; pulse, 120.

20th. A.M., temperature, 100°; pulse, 120. P.M., temperature, 99.4°; pulse, 120.

21st. A.M., temperature, 98.8°; pulse, 120; respiration, 30. P.M., temperature, 100.8°; pulse, 120; respiration, 32.

22d. A.M., temperature, 99.8°; pulse, 122; respiration, 28. P.M., temperature, 101.2°; pulse, 128; respiration, 32.

30th. P.M., temperature, 98.4°; pulse, 116.

The post-mortem examination was made twelve hours after death by Dr. F. Kebler, pathologist: Man, apparently thirty years of age. Post-mortem rigidity well marked. On right side of chest, in axillary line in fifth intercostal space is an incised wound several inches long, from which protrudes a drainage-tube. The right pleural cavity was found to contain about one pint of blood-stained pus. Numerous recent adhesions bound the lung to the chest-wall and to the diaphragm. On the left side were some old pleural adhesions. In the lower lobe of the right lung was found a cavity large enough to admit the closed fist. By a perforation of the diaphragm the excavation communicated with a large abscess-cavity in the liver. Both contained a considerable quantity of blood-stained pus. In the right lobe of the liver posteriorly was found a large-sized pus-cavity, communicating with the pleural cavity by means of the perforation in the diaphragm noted. Surrounding the main abscess-cavity were numerous smaller ones, varying in size from a small nut to a pigeon's egg. The pus in all these cavities was more or less blood-stained. Kidneys, stomach, spleen and small intestines were all normal. The large intestines contained a small number of old dysenteric ulcers.

Until the moment of aspiration I was under the impression that we were dealing with a case of phthisis that had given rise to a sacculated exudation in the right pleural cavity, the boundaries of the fluid-accumulation being clearly traceable upon physical examination by the dulness, absence of breath-sounds and diminished vocal resonance. The muco-purulent character of the expectoration, tinged, as it was, with blood, seemed confirmatory of such a diagnosis; and I was prepared, from the almost rusty character of some of the sputa that I had seen, to find an acute lobar pneumonia, developed in the course of what I firmly believed to have been an advancing phthisical destruction of the lung. The fever, the night-sweats, the loss of strength and flesh, accorded well with such an opinion; nor was there aught in the physical signs to direct attention to the liver as in any way involved in the difficulty.

Posteriorly, the pulmonary resonance over the right side was pretty clear, and extended downward almost to the usual level. Anteriorly, the lower border of the liver-dulness coincided with the lower costal margin; the upper border in the anterior axillary line was in the sixth intercostal space; anteriorly, the hepatic dulness passed insensibly into that due to the exudation. Moreover, aside from pain in the lower portion of the chest, early in the course of his illness, nothing in the patient's history suggested hepatic trouble. The patient denied having had anything like a dysenteric attack, but I am now inclined to believe that much obscurity in his history was due to ignorance or to mental hebetude.

The case was aspirated in the presence of the class of students at the hospital, who had been informed of the possibly purulent character of the fluid. As soon as the chamber of the aspirator began to fill, all doubt as to the nature of the case was removed. The thick, almost gelatinous, greenish-red exudation, with occasional streaks of creamy pus, alternating with a fluid of the color of anchovy sauce, could come from only one organ in the body. Clinicians and pathologists are familiar with the characteristics of this pus, which, when allowed to stand for a short time, becomes more viscid, presents a sort of glossy, shining surface, and at times almost seems to undergo a sort of coagulation, solidifying into a semi-solid mass; it rarely shows any trace of bile-coloring matter or of bile-salts. It is the fluid found originally only in hepatic abscess, so that its presence in other localities is in itself proof-positive not only of abscess of the liver, but of communication between the abscess and the accidental cavity in which this pus may be encountered.

There was no hesitation, therefore, in declaring that the case was not one of phthisis, but of hepatic abscess, perforating the diaphragm, with subsequent

perforation of the lung. Hence the peculiar character of the expectoration, the sweats, the fever and the prostration; hence the early pain in the right side and the dyspnea; hence, too, the circumscribed sacculated cavity in the pleura, with dulness on percussion, passing insensibly into the liver-dulness. The abscess evidently was situated in the right lobe, near the upper convexity, so that it had found less resistance in advancing upward than in a gradual invasion of the liver substance. The absence of any enlargement of the liver sustained this view. It is interesting to note the change in the sputum from purulent to clear white, frothy mucus, immediately after the aspiration; only again to become purulent after a brief interval. The pus-cavity filled rapidly, and surgical intervention was distinctly indicated.

As shown by the autopsy, the operation came too late to be of service, since multiple abscesses had formed in the liver, possibly by infection from the original source, more probably by local infection from the large primary abscess. The arrangement of the secondary or smaller abscesses in a somewhat concentric manner around the larger cavity, their tolerably uniform size, and the appearance of smaller, almost microscopic, pus-collections on their confines, would argue rather for a local than a distant source of infection. This should obviously incite to early evacuation, with free drainage, whenever abscess of the liver is recognized; nor should incision be even tentatively delayed by aspiration.

The conviction that the case was one of phthisis, of rather unusual distribution, seemingly affecting the bases of both lungs, caused us to neglect the microscopical examination of the sputum; so certain were we, that the usual examination for bacilli tuberculosis was not even asked for. However, upon recognizing the true character of the case, examination of the stools and pus was repeatedly made, with the uniform result of showing us, present in large numbers, the amœba coli, the organisms the association of which with tropical dysentery and hepatic abscess is, by some clinicians, now considered causal.

My attention had been particularly directed to the article upon the amœba coli in the *Bulletin of the Johns Hopkins University*, from the able pen of Professor Osler. Sketching with characteristic ability and clearness the rather meager literature of the subject, the article embodies the full report of a case of hepatic abscess, characterized by the presence of amœba coli in the stools and in the pus. A subsequent communication in the same journal, by Professor Welch, pays special attention to the appearance of these organisms, which Leuckart classified as belonging to the rhizopods. A third article, also in the *Bulletin*, by Dr. Simon, reports a case in which the diagnosis of hepatic abscess perforating the lung was correctly made from the recognition of the amœba in the sputum.

While highly flattering to the zeal of the medical staff of the Johns Hopkins Hospital, it is singular that this should embrace, so far as known to me, all of the American medical literature bearing upon the point in question.

There is little, if anything, to add to the lucid and succinct description of Professor Osler. The specimens of amœba observed by myself and by others of the medical staff of the Cincinnati Hospital conformed accurately to the account he has given, part of which I take the liberty of reproducing here. Some of the amœbæ were considerably larger in size than those figured by him, though the average would not exceed his estimate. The greatest variation was observed in the rate of movement, some travelling across the field with almost lightning-like rapidity, others being very sluggish in sending out the knob-like processes that seemed to precede each change of place. The following is the reference alluded to:[1]

"*Description of the Amœbæ.*—(a) From the liver: The size ranged from 10μ to 20μ, which appears to be somewhat greater than that indicated by Kartulis. When at rest the outline was usually circular, occasionally ovoid; but when in motion they presented, as shown in the figures, the extremely irregular contour of moving amœboid bodies. The protoplasm could be distinctly differentiated into a translucent homogeneous ectosarc, or motile portion, and a granular endosarc containing the nucleus, vacuoles and granules. The hyaline ectosarc was, as a rule, very distinct, and in many examples the granular protoplasm of the interior was surrounded by it as a distinct rim. Occasionally a form was seen in which this portion was much less developed, and the greater part of the organism seemed composed of granular substance. Within the endosarc the vacuoles constituted the most striking feature. Sometimes the interior substance appeared to be made up of a series of closely set, clear vesicles of pretty uniform size. As a rule, one or two larger vacuoles were present, the edges of which were not infrequently surrounded by fine dark granules. I never saw a true contractile vesicle which displayed rhythmical pulsations, but the larger vacuoles underwent at times changes in size. The nucleus was plain enough in some examples; in others very difficult or impossible to detect. It was usually pale, ovoid or rounded in outline, and with a very delicate contour. No distinct nucleus was seen, though there were sometimes coarser granules which possibly represented it.

[1] The Johns Hopkins Hospital Bulletin, vol. i., No. 5.

"When once recognized there was not the slightest difficulty in distinguishing these bodies, even when at rest, from the pus-elements, not only by their size but by the entirely different appearance of the protoplasm.

"The movements, however, constitute their most interesting and distinctive features. From any portion of the surface a rounded hemispherical knob would project, and with a somewhat rapid movement the process extended, and the granules in the interior streamed toward it. As in the pond-amœbæ, the clear ectosarc seemed to initiate and play the important part in the movements. Though sometimes slow, many examples were found in which the alterations in contour and the change in locality were quite as striking as in the large, active forms of pond-amœbæ. The processes were always rounded, never angular or linear, as in white blood-corpuscles. Motile forms were found each day in the pus during life. They seemed at times more active apparently than at others, and the movements went on at the average laboratory temperature, but seemed increased by heat. They continued active for hours at a time. Twice the movements were observed to continue in the same organism for more than ten hours."

Beside personal observation, I have the following reports, kindly submitted by Dr. J. C. Oliver and Dr. C. S. Evans, curators of the pathological department:

December 17, 1890.—A specimen of pus, obtained by aspiration, was examined for liver-cells; large multinuclear cells were found containing some pigment. Upon the same day, chemical examination of the pus showed no trace of bile-pigment.

19th.—A stool of the patient was examined for amœba coli, which were found in moderate number and in active motion.

20th (date of operation).—Pus obtained from the chest-cavity was found to contain amœbæ in large numbers. The first field showed eight of these organisms. Elastic fibers of the lung were present in considerable quantity.

27th.—Pus from the wound showed amœbæ in considerable number, actively moving, and some elastic lung-fiber.

31st.—Pus from the wound contained active amœbæ, also lung-fiber and biliary coloring matter.

January 1, 1891.—Post-mortem specimens of pus from multiple abscesses showed amœbæ to be uniformly present. Upon staining, *no bacteria* were found.

Inoculation-experiments with sterilized agar were made by Dr. Evans. An attempt was made to cultivate the amœba in sterilized meat-broth. The experiment was also made with the hanging-drop; but these attempts proved unsuccessful, not yielding any growth of the amœba. As suggested by Dr. Evans, it is possible that future efforts in this direction would be more fruitful if sterilized gutter or sewer, or stagnant water be employed as culture media.

We have, then, a case of hepatic abscess, connected with dysentery, and amœbæ constantly present in the fecal discharges and in pus from the liver. Is the amœba the cause of both? More extensive clinical experience can alone determine this point with precision; what evidence we have is wholly confirmatory; and it remains to be seen if cases of dysentery ever occur independently of all association with the amœba. The observations of Professor Koch and his cholera commission, as summarized by Kartulis, show the constant association of the amœba with tropical dysentery, and its presence in the wall of the intestinal ulcers, as well as in the contents of the gut.

Whether or not tropical dysentery differs in this respect from the sporadic variety occurring in temperate climates remains to be seen. In our case there was no history of residence in warm latitudes, although the patient's statements were not reliable. Accepting for the moment the dependence of dysentery upon the amœba coli, it is easy to understand how, by virtue of its great mobility, this organism should be enabled to penetrate the delicate capillary wall, or to gain entrance into the circulation through vessels opened by the ulcerative process in the intestine. Once in the circulation, its transmission to the liver through the portal circuit follows almost of necessity. Its arrest in the substance of the gland ensues, partly by reason of its own considerable size, as compared with the caliber of the vessels, partly because of the great complexity of the capillary network that would render futile a momentary elongation, made to conform to the outline of a single loop. Retained thus in the liver tissues it constitutes an irritant sufficiently intense to produce a low grade of suppuration, with more or less severe constitutional symptoms of sepsis. Judging from the number found in the pus, the multiplication of the amœbæ in the liver tissues must be comparatively slow. Secondary infection from the original abscess takes place by penetration of the pyogenic walls in consequence of the amœboid movements, and the arrest of stray amœbæ in the immediate vicinity.

The causal relation of the amœba to dysentery would also serve to explain some clinical facts in the history of that disease.[1] The first of these is the prevalence of dysentery in warm latitudes, and during the hot season of the year in temperate climates. The factor of temperature has the greatest possible bearing, as we know, upon the multiplication of all low organisms, whether animal or vegetable. (The warming of the slide bearing the

[1] See also Stengel, "Acute Dysentery and the Amœba Coli." THE MEDICAL NEWS, Nov. 15, 1890.—ED. NEWS.

amœbæ was always attended with greater activity of movement.)

Whatever the native culture-ground of the amœba (and the most natural inference would point to some water contaminated by an abundance of organic material), it is evident that high temperature, by increasing the number of amœbæ, would by so much favor their entrance into the body, and thus increase the morbidity from this cause. A second clinical fact, explicable upon the same hypothesis, is the undoubted curative value of simple ice-water injections, or of cold injections of boric fluid. In the former instance we are dealing solely with the manifest influence of temperature. As warmth favors a multiplication of organisms of a low order, cold either destroys their vitality entirely or suspends it sufficiently to enable the bowel to throw off, with the enema, the organisms, the presence of which is so deleterious. Were the enema of service merely by its cleansing effect, there would seem to be an advantage in the use of warm rather than cold fluids; yet clinical experience must assign the greater value to water of almost icy temperature. The addition of boric acid, as well as of other weak antiseptic solutions, would increase the efficacy by supplementing the destructive power of low temperature.

The evidence of causal connection of the amœba coli with dysentery and with hepatic abscess of dysenteric origin, thus far presented in medical literature, is not sufficient for definite statements; it must be considered as strongly suggestive rather than as conclusive; and it is with the view of stimulating further research upon a subject so interesting that I have ventured to present this history and these comments.

P. S.—An interesting point has been brought out since the foregoing was written. A patient, supposed to be suffering from some hepatic disorder, was admitted to the medical service of the hospital. Physical examination showed the presence of an abscess below the costal margin. Some pus was withdrawn by aspiration. No amœbæ were found. Subsequently paracentesis was performed, and it was seen that the abscess was sub-peritoneal, not connected with the liver or any abdominal viscus. In two cases of hepatic abscess, not occurring in my service, the amœba coli has been observed in the discharges from the abscess-cavity.

COMPARATIVE DATA IN THE TREATMENT OF UTERINE TUMORS.

By MARIE B. WERNER, M.D.,
of Philadelphia.

The safest method of treating uterine tumors has of late been a question that has aroused the most earnest debates, especially between surgeons and electricians. Those who have given the subject careful attention will have a little patience with me if I presume to add to the conclusions of others my own, based as they are on more than five years of careful study of two methods that are stern antagonists in the field.

Electricity has claimed the attention of many, and now, after some years of earnest trial, one can decide as to either its value or harm to the patient. Many so-called cures have been ascribed to its use, but from personal experience I feel sure that some important factors were lost sight of when such assertions were made. Patients having untold confidence in their physicians are often more than willing to keep pace with the desire to feel benefited, and should the doctor also be anxious to place faith in the method, reasoning from cause to effect will often be lost sight of on the pinnacle of faith.

There are certain points to be considered in the treatment of uterine tumors by electricity. The most important is *correct diagnosis*. In carefully reading Keith's report of 106 cases treated by electricity, one is impressed with the fact that cases of subinvolution, metritis and pelvic inflammation are classed alike under the head of uterine tumors.

Changes in the tumor are frequently encountered that must be considered—I allude to the suppurative, cystic, edematous and sarcomatous varieties; adding to this the fact that the appendages are more often diseased than not, it certainly becomes a matter of the most delicate diagnostic skill to make it safe for the patient to undergo treatment by electricity. Abdominal surgeons, no matter how experienced, often hesitate to name a painful mass or tumor before seeing it.

That the general health is sometimes improved after treatment with electricity has been demonstrated by the statistics of some of those who have made a careful study of the utility of this agent. Thus, Dr. John Homans,[1] of Boston, reports that of 35 cases treated by electricity, the general health was improved in 15, was made worse in 2, was improved and afterward made worse in 2, was unaltered in 11, and 5 were not heard from. Among those that were made worse he must include one case of death reported.

When we consider that the careful physician will attend to the general health of his patient, in conjunction with electrical treatment, we can readily understand the improvement, as well as that often proper hygienic care might have achieved it unaided. In referring again to Dr. Homan's conclusions, we find that profuse hemorrhage was diminished to within normal or bearable limits in 9, increased in 6, and unchanged in 9. The meno-

[1] Boston Medical and Surgical Journal, March 12 and 19, 1891.

pause occurred in a few cases after treatment was begun. If it is admitted that hemorrhage is checked by the application of the positive pole, and that the hemostatic effects are due to a cauterant action, many doubts and fears arise as to the ultimate results for the patient, for cicatricial tissue belongs, as we all know, to the lowly organized structures.

Dr. Franklin Townsend[1] reports 4 cases of uterine fibroids in his series of 17 cases treated by electricity. Such was his experience that he was satisfied to resume his surgical work, feeling that he could thereby do greater justice to his patients.

Those advising electrical treatment consider that a patient placing herself under the surgeon's care is passing through an operative shadow of death, is mutilated, and may look forward to a possible hernial weakness. If one studies some of the cases reported by the various advocates of electricity—for instance those contained in Keith's report of 106 cases of uterine tumors treated by electrity, Cases IV. and VIII. show at once that the patients not only passed through the shadow, but actually succumbed. Many others suffered from attacks of peritonitis; and all so-called cures seem doubtful to the careful student, since the presence of the tumor and a fluctuating condition of health makes one think that the sword of Damocles is still hanging over their heads.

Rutherfoord's[2] case shows how the patient was passing beneath the shadow of death for upward of five months. Here suppuration of the tumor and subsequent septic poisoning undoubtedly caused the train of symptoms that followed three intra-uterine treatments with the positive pole. In a recent discussion of Dr. John Homans' paper, Dr. J. R. Chadwick[3] gives an account of 11 cases treated by him with electricity for six months. In no case did the fibroids diminish in size during or subsequent to the treatment; in 3 cases metro-peritonitis was excited; one of these ended fatally on the sixth day; in one case general septicæmia set in a day after the sixth treatment, with a fatal termination from pulmonary embolism twenty-six days later. These results were the occasion of his abandonment of the use of electricity in gynecological practice.

Dr. Anna M. Fullerton[4] reports 9 consecutive cases of abdominal section, in which the harmful effects of previous electrical applications in cases of salpingitis and allied conditions were plainly demonstrated. Adding to this the fact that in cases of uterine tumors most of the appendages are either primarily or secondarily diseased, the danger of electrical treatment becomes at once apparent; it is certainly often one of the causes of localized peritonitis. Apostoli's directions prove that he has had reason to recognize this danger, for he says: "Only apply a dose that the uterus can bear. Never be rough or take the patient by surprise. Reach the maximum dose gradually and diminish it in the same manner." He makes another important statement: "Ovarian or tubal intolerance depending upon diseased appendages will demand an increased precaution, and forbid all applications of high intensity." Adding these cautions to the experience of the abdominal surgeon should be sufficient to cause a halt in the application of electricity in gynecology, and one should ponder well on the question of mutilation. In connection with this subject, I will briefly cite a case from my practice:

In March, 1886, I was consulted by a patient for painful, irregular, scanty menstruation. She was married, had never conceived, and was anxious to have children. Examination revealed two fibrous masses in the posterior wall of the uterus. There was a history of gonorrhœal infection. I used the continued current (negative pole). For five weeks the patient appeared to do well, and we were both encouraged; after that, however, she developed chronic peritonitis which finally became septic.

This was verified by a subsequent section, performed as a last resort to save life, in which Dr. Joseph Price assisted me.

This was sufficient to make me fully realize the dangers of electrolysis. I had seen Dr. Apostoli use it, and had followed his directions closely. To my mind there is less mutilation in removing diseased organs than in subjecting the patient to the dangers of sepsis. Again, when multiple fibroids and pregnancy coexist, the risk for the patient is increased, since it may become necessary to perform a Porro-Cæsarean to effect delivery.

Ventral herniæ are extremely rare when the necessary care is given to include enough fascia and muscle in the sutures, and the wound is accurately closed, with attention to sufficient rest in bed after operation, and the use of abdominal support.

Having considered the electrical question, we will turn to the surgical. There are two principal methods that have been more or less successful in the hands of our surgeons—removal of the appendages and hysterectomy. Myomectomy still presents many obstacles to the permanent recovery of the patient, since as long as some uterine tissue remains the enucleation of one or more tumors does not preclude the possibility of growth of others. Another important point for consideration is the condition of the appendages. This point can best be illustrated by the conditions found in a patient upon whom I had the privilege of seeing Dr. Joseph Price

[1] Transactions of the Obstetrical and Gynecological Society, September, 1890.

[2] Proceedings of the British Gynecological Society, October, 1888, p. 323.

[3] Boston Medical and Surgical Journal, March 12, 1891.

[4] Medical and Surgical Reporter, August 16, 1890.

operate. A multinodular fibro-myoma had become pedunculated; myomectomy would have been an easy matter, but the entire uterus and appendages having been removed, a subsequent examination of the specimen showed three small fibroids in the uterine walls, while the appendages had been bound down by dense adhesions and were diseased, amply proving that the patient's condition would doubtless have been made worse if myomectomy had been performed, since the source of greatest pain, adherent and inflamed appendages, would have been left, as well as the possibility of subsequent development of the three remaining nodules.

Leopold[1] makes a note of five cases in which subsequently to operation there was a development of other growths—in one case after removal of the appendages, and in four after enucleation—necessitating secondary operation. One of these cases ended fatally after hysterectomy—not, however, before having had a submucous growth removed after the myomectomy. These cases certainly go far to prove that myomectomy is not so safe as to ultimate results as is removal of the appendages or hysterectomy.

In which cases shall the one or the other be given the preference? Lawson Tait, with his vast experience, has given us his conclusions. These hold good for most cases. His investigations have led him to believe that the multinodular myoma is essentially a disease of menstruation; hence his advice is to remove the appendages in such cases, if possible. If this is done, and the patient has not yet reached the age of forty, the tumors generally disappear entirely. The edematous myoma, however, seems unaffected by the menopause, Tait having watched the progressive growth of one after the menopause until the patient was sixty-three years old, when he successfully removed it by hysterectomy. It is interesting to note further that Mr. Tait has performed hysterectomy for edematous myomata in the case of patients between the years of eighteen and thirty-one, feeling certain that removal of the appendages may arrest menstruation, but not the growth of the tumors.

The youngest patient in the case of whom he performed hysterectomy for multinodular myoma was thirty-seven years old, and the oldest fifty-two. This seems in a great measure to verify his statements as quoted.

In the early stages of myomatous growths, menorrhagia is one of the most troublesome symptoms. When there is pressure upon the bladder or pelvic structures, or if the appendages are inflamed or diseased, pain becomes an additional trial to the patient. Dr. Joseph Price, whose large experience enables him to make an estimate of these complications, states that the appendages are diseased in 95 per cent. of cases.

To sum up: The most rational treatment, based on scientific research, is to remove the appendages when the symptoms produced by the growth become unbearable to the patient, or if there is reason to suppose that the appendages are diseased from any cause. In the case of the multinodular myoma, this promises a cure, provided the operator is careful to tie close to the cornua of the uterus and to remove all ovarian stroma, together with all sources of infection or irritation, and has given careful attention to the minutest details of the toilet of the peritoneum, thus reducing possible secondary complications to a minimum.

There is, however, one other point to be considered, and, in order to illustrate it, I will briefly cite one of my own cases:

In October, 1889, I removed adherent and diseased appendages from an extremely anemic patient with a multinodular myoma. The usual metrorrhagia followed forty-eight hours after the operation, and lasted five days. Four weeks later the flow again came on, and in spite of ergot and hot douches continued fourteen days. Six weeks after the operation I dilated the uterus, and found a submucous growth the size of a hen's egg, removed it, and the hemorrhage ceased. In the following July (eight months later) another hemorrhage, dependent upon a second submucous growth, as large as a pigeon's egg, was checked by removal of the tumor. The patient has since had no return of the hemorrhage, and enjoys good health. The point I desire to make here is, that the patient was subjected to less risk by the use of the dilator and écraseur after the removal of the diseased appendages than had this method of procedure been the first step in her treatment. Dr. Bantock supports this view in an argument reported in the *Proceedings of the British Gynecological Society*, October, 1888.

Tait condemns any kind of uterine dilatation or medication when the appendages are inflamed or adherent. Leopold, on the other hand, advises exploration of the uterine cavity to determine the possible presence of submucous growths *before* removal of the appendages. The possible dangers in following this advice are clear to those that have witnessed attacks of pelvic inflammation follow intra-uterine manipulations, when there was reason to suppose the appendages were diseased.

In looking over the statistics upon the removal of uterine appendages by skilled operators, we find much to encourage us.

In his first series of 1000 sections, Tait[1] records

[1] Archiv für Gynäkologie, Band xxxviii. Heft 1.

[1] "Tait's First Thousand," British Medical Journal, 1885. "Tait's Second Thousand," British Medical Journal, November, 1888.

99 cases of removal of the uterine appendages, with 7 deaths, or a mortality of 7 per cent.; this is improved in the report of his second 1000—148 cases, with 3 deaths, or a percentage of 2.03.

Leopold[1] has collected the cases of ten operators (all German except Tait), giving a summary of 744 cases, with 60 deaths, or a mortality of 8 per cent. Leopold has credited Tait with 393 cases, while he has actually operated in but 247; deducting these, it leaves a mortality of 11.4 per cent. for the German operators.

The fact that removal of the uterine appendages does not always arrest the growth of the tumor, or that at other times hemorrhage remains a troublesome symptom, has been explained, and shows that accurate diagnosis at skilled hands, combined with good judgment, will reduce the complications to a minimum.

This brings us to the consideration of hysterectomy, an operation that even a few years ago was regarded as one of the gravest. Many methods have been devised by numerous operators, for the disposal of the stump, each striving to reduce the rate of mortality. The necessity for the operation is sometimes an unexpected sequence in cases in which it is impossible to remove the appendages, or when an edematous myoma is present. For these reasons it becomes an interesting question to decide what method promises the best results.

In order to arrive at some definite conclusions in this matter, I sent a circular letter to such operators as were known to me. I shall first give the results of those who have performed more than ten hysterectomies:

Dr. Joseph Price, 53 cases, 3 deaths, (5.6 per cent.), extra-peritoneal; Dr. John Homans, 45 cases, 8 deaths (17.7 per cent.), 39 extra-peritoneal, 5 intra-peritoneal; Dr. P. F. Mundé, 12 cases, 4 deaths (33 per cent.), extra-peritoneal; Dr. M. D. Mann, 12 cases, 1 death (8.3 per cent.), extra-peritoneal; Dr. H. T. Byford, 21 cases, 4 deaths (19 per cent.), vaginal fixation, abdominal fixation. The aggregate of fifteeen operators who have performed less than ten hysterectomies by the extra-peritoneal method includes 46 cases, with 10 deaths, or a mortality of 21.7 per cent. By the intra-peritoneal method five operators operated in 15 cases, with 5 deaths, a mortality of 33.3 per cent. Considering the number of operators, this latter compares favorably with the record of Leopold's 56 cases: 22 cases, with 5 deaths (22.7 per cent.), intra-peritoneal; 34 cases, with 7 deaths (20 per cent.), extra-peritoneal. The mortality of hysterectomy in England and America, as represented by the labors of two leading surgeons, stands thus: In his last 1000 cases, Lawson Tait had 88 of hysterectomy, with 10 deaths, a mortality of 11.3 per cent., and a series of 31 consecutive recoveries. Joseph Price has had 53 cases, with 3 deaths, a mortality of 5.6 per cent., and a series of 43 consecutive recoveries.

The improvement in the last few years is quite manifest when we refer to Bigelow's[1] statistics that show that the mortality of operations performed by the extra-peritoneal method was, during the preceding five years (from 1879 to 1883 inclusive), 36.54 per cent., and that during the years from 1881 to 1883 the mortality was reduced to 26 per cent. This excludes all cases in which only portions of the uterus were removed, and includes all those in which the uterine tumor and appendages were removed.

Bantock's success has increased in direct ratio with his improvement and skill in the perfection of the extra-peritoneal method, his few cases of intra-peritoneal treatment having ended disastrously. In his paper on the "Treatment of the Pedicle in Hysterectomy,"[2] he reports 5 cases treated intra-peritoneally, with 4 deaths and 1 recovery; while he reports 57 cases treated by the extra-peritoneal method, with 45 recoveries and 12 deaths; and, in another series, 13 cases with no death.

Martin has lately abandoned the intra-peritoneal method, feeling that there is not sufficient security against secondary hemorrhage, the discharge of suture-threads from the stump and the liability to septic infection from the cervical canal often retarding recovery. He has performed 135 supra-vaginal amputations of the uterus, with 46 deaths, and has now concluded to remove the cervix with the uterus, thus overcoming the source of danger.[3]

Dr. H. T. Byford has endeavored, and it seems successfully, to retain the cervix, and yet remove it from the pelvic cavity by his method of vaginal fixation, and at the same time retaining that which, as he ably expresses it, "is the keystone of the pelvic roof structure." He reports 14 cases treated by this method, with 1 death.

Dr. H. A. Kelly[4] sutures the face of the stump as Schröder recommends, but suspends it in the lower angle of the wound. In a personal communication he says: "I think I know about how many cases I have had after my own method—16, with 1 death. This death was reported in my fasciculus on Gynecology, *Johns Hopkins Hospital Reports*, p. 122. You will find another death reported on p. 120, in a case in which I was unable to follow my method, as the whole uterus was involved in the tumor." The 16 cases mentioned are not all included in this hospital report, but there is a report of 6 cases, with 3 deaths;

[1] Archiv für Gynäkol., Band xxxviii, Heft 1, p. 29.

[1] American Journal of Obstetrics, 1883, p. 1274.

[2] Transactions of the American Gynecological Society, 1887.

[3] Annals of Gynecology, February, 1891.

[4] *Vide* THE MEDICAL NEWS, June 28, 1890.

probably the third death was another in which he could not follow his own method.

In summing up the results of the various methods, we find that the extra-peritoneal treatment has found greater favor, because of its safety from hemorrhage, the more rapid and certain convalescence, and, if carefully carried out, the danger of septic infection being almost *nil*.

I feel certain that, with all due respect for the surgical skill of Dr. J. Price, if he was not so extremely careful to attend to *all* the smaller details his work would not have been crowned with such remarkable success as it has been.

PROTECTION FROM DISEASE.[1]

By WILLIAM B. CANFIELD, M.D.,
of Baltimore, Md.

When a physician attempts to cure disease, he simply, as far as possible, removes the cause, clears the way to recovery, and lets Nature do the rest. In many cases Nature does her work well, although not always getting due credit for warding off disease and protecting us from harm; in other cases, she succumbs to her stronger foe, disease. Those of us who live in crowded communities are surrounded by an invisible enemy, and with every breath we are liable to draw in disease in some form —and yet so many escape! We open our windows and let in what we call "fresh air," and as the sunbeam slants across the room, what myriads of dusty atoms meet our eyes! If in a quiet room we inhale at every breath this dust, what would we not breathe in the streets of dusty cities, in mines, and in mills! In the sanitary management of our cities, the danger of flying dust, with its many impurities, is rarely considered, and the dust of city streets that should be properly sprinkled and carted away is simply stirred up by the indolent sweepers and much of it is probably taken away in the clothes and breathing apparatus of the unfortunate passers-by. Such dust, when inhaled, does harm both from the impurities it may contain, and, when present in appreciable quantity, from its mechanical action and irritation.

That germs float in the air, even in the most secluded spot, the careless housewife knows to her sorrow when she leaves her jelly-glasses uncovered for a short time and finds the surface covered with a beautiful mould. Bacteriology has told us that the germs of some contagious diseases are found in the air and may be inhaled and produce disease. Thus diphtheria, glanders, measles, whooping-cough, hay-fever, pneumonia, and consumption are all undoubtedly in part due to the inhalation of dust containing the germs of these diseases. If, then, the germs of disease are in so many forms floating in the air, it is strange indeed that so many escape, especially when we consider the crowded public and private rooms, cars and other places where the sick and well meet together and breathe the same air. Fortunately for us, Nature has erected a series of barriers against such an enemy as inspired dust, and in exposing us to this danger, has given us certain means of protection that repel attacks not unusually severe.

In persons who breathe as they should, all inspired air passes first through the nostrils and is thus not only warmed to the proper temperature for the throat and lungs, but the moist walls serve as a sieve by which the air thus inhaled is as far as possible relieved of dusty impurities. This shows at once the importance of breathing with closed mouth, especially in passing from a heated to a cooler atmosphere, and of always thus breathing in an atmosphere of visible dust. The moist walls of the lining membrane of the nasal cavities fill the inspired air with moisture, making it more agreeable to the throat and lungs.

The nasal passage in almost every animal deviates from a straight channel, and this is according to the needs of the animal. In man, who is upright and far from the ground, the passage is only slightly curved and may almost be considered rudimentary in its development. In birds, which fly far above the earth, the nasal passage is almost straight. In all quadrupeds, and especially in those that graze or seek their food on the ground, and those exposed to sudden changes of temperature, as in amphibious animals, the nasal passages are exceedingly tortuous and in a high state of development, and their extreme moisture, due to the active secretion of their lining mucous membranes, serves, as far as possible, to catch and stop the entrance of dust into the throat and lungs. This is familiar to us in the cold nose of the dog, cow, etc., and in the constant sneezing of the horse. Those who breathe abnormally, with open mouth, are much more liable than others to diseases of the throat and lungs. In spite of the outward defence we have in the nose, dust and foreign substances do occasionally get into the throat and trachea, but the latter is so very sensitive to the slightest irritation that the presence of such foreign substances excites a cough and they are quickly expelled. The minute anatomical structure of the lining membrane of the trachea is, as we know, much like the waving surface of a wheat-field. The whole surface of the trachea and larger lung-tubes is covered with ciliated epithelium the waving motion of which is from the lungs upward to the throat, and very minute particles of dust and foreign

[1] Read before the Medical and Chirurgical Faculty of Maryland at its semi-annual meeting, held at Cambridge, Md., November 12, 1890.

substances that find their way into this region are thus gradually removed. This membrane is also active during sleep, as many throat sufferers and others may have noticed from the fact of their "morning cough" on rising.

In spite of these defences which Nature has raised against her enemies, disease-germs and foreign substances find their way into the trachea and even to the ultimate ends of the finest lung-tubules. In this way disease-germs, and especially the tubercle bacilli, get into the lungs, and in those predisposed to this disease this organism easily thrives. From recent investigations in microscopical anatomy we now know that Nature does not give up even after these foreign substances and disease-germs find a place in the body. In the organism, and more particularly in the blood, there has long been known a cell or corpuscle called the white blood-corpuscle or leucocyte, and in suppuration the same cell is recognized as the pus-cell. That this cell seems almost ubiquitous in the body and that it assumes different rôles under different circumstances has also been the subject of repeated investigation. The most recent function now assigned to this cell is that of a "carrier cell," scavenger cell, or phagocyte, because its function has been learned to be that of devouring or carrying off germs and foreign substances. This was noticed in those who worked in dusty atmospheres. The dust was inhaled in such quantities that it got into the lungs, and, as it could not all be coughed up, it worked its way into the lung substance, where, by irritation, it attracted these carrier cells or scavengers, and, as far as possible, these promptly attacked the particles and carried them either to the nearest lymphatic gland, where they would be quiet and harmless, or the dust-containing cells found their way into the lungs and were coughed up. This has been repeatedly noticed in the case of coal miners, in whose expectoration large numbers of these cells were found, and in those cells bits of coal-dust could be easily recognized. In some cases in which the piece of dust was too large for one cell to devour, two or more would join together and close around it. These cells have certain movements, called amœboid, from their resemblance to the movements of the amœba, one of the lowest forms of life, and found on the surface of fresh-water ponds. These amœboid movements consist in a change of shape on the part of the cell by which it thrusts out a part on one side and draws in another part, and by thus changing its shape it surrounds the substance and assimilates it. That these cells endeavor to do their work as well as possible is shown by the fact that years after miners have ceased to work in coal mines, it has been noticed that the expectoration remained dark and a microscopical examination showed these cells to be full of bits of coal and pigment, thus proving that the carrier cells were still trying, as far as possible, to remove the foreign substances. This has been experimentally demonstrated by introducing finely divided organic substances, such as powdered cinnabar, into the tissues and lungs of an animal, and after a short time microscopically examining the tissues and glands of the animal, when these carrier cells are found loaded down with this red pigment. This is especially true of the cells in the glands.

In all these cases the rôle of the foreign substance is undoubtedly passive while the cell is active. Further study of these cells showed that they act antagonistically to pathogenic bacteria—that between these cells and the bacteria there is a struggle for existence or supremacy, and on the result of the struggle depends a condition of illness or health. These observations were first made on a disease produced by a fungus in a fresh-water crustacean, the daphnia, a "water flea." The fungus swallowed by the crustacean produces spores that pierce the intestinal wall, enter into the tissue and are at once surrounded by these phagocytes. Here a struggle takes place that results in a victory for the cells, the latter closing around these fungus spores, devouring them and finally destroying them by a process of "intra-cellular digestion." In this case the action is very simple, but in the case of other animals and man the process is not so simple.

A careful study of these bacteria, both biological and chemical, has fully proved that they exert their deleterious action not so much by their actual presence as by a poison or ptomaïne that they secrete from their minute bodies, and that each specific bacterium or bacillus has its own peculiar body-product which, in the case of pathogenic or disease-producing germs, is a poison. This then complicates the struggle between the bacteria and the body-cells. There is then an actual life-and-death struggle between cells and bacteria. Inoculation of a frog with the bacillus anthracis showed this struggle very beautifully. A study of the cells of this frog revealed them with bacilli and parts of bacilli within the cell-wall in process of digestion or disintegration.

Thus there is good reason to believe that in the presence of a contagious or infectious disease, the germs floating about, or in some way gaining access to the individual near by, find their way into the body and there a struggle takes place between them and these cells that are attacked by the invaders. Now begins a struggle for supremacy. The cells close around the attacking hosts and endeavor to destroy them and carry them off or at least to prevent the further ingress of the bacteria. If the cells are victorious, they devour the germs, carry them away and thus the individual escapes the disease.

But, if the germs increase too rapidly and, by the secretion of the poison or ptomaïne from their bodies, cause the death of the cells, then sickness results. In this case the accumulation of these carrier cells that are killed by the germs results in suppuration, for the cells of pus are but the white blood-corpuscles, leucocytes, or phagocytes, when dead. As heat increases the motion of these carrier cells and also their protective activity, the rise of temperature that precedes and accompanies suppuration has been looked upon as an attempt on the part of Nature to assist the activity of the cells and to destroy the invading bacteria.

Immunity from second attacks of certain diseases, as well as the protective influence of certain inoculations and vaccinations, has never been clearly understood, although various explanations have of late been offered. In all probability, although this is but a theory sustained by analogy, after recovery from the contagious disease, usually occurring but once, the bacteria are supposed to secrete some morbid virus that hinders their own life, just as animals produce carbonic acid which is poisonous to them, or the yeast-fermentation produces alcohol which stops the growth of this fungus. In the same way, after these attacks, the cells of the body are supposed to contain some substance that resists the second attack of those organisms. It may be that Koch's paratoloid, when injected under the skin of tuberculous patients, acts in the same way. The strength and duration of this immunity differs in individuals. Of course, the ability of these cells to struggle with bacteria is lessened in weakened individuals, and hence, for example, it is very probable that the lowered vitality caused by being chilled below the recuperating point invites an attack of pneumonia or some other disease, not from the mere chilling, but from the weakening of the strength of the cells. In hereditary diseases the predisposition plays an important rôle.

We thus see that before Nature succumbs or yields to what has been very wisely called an "attack" of a disease, she uses various means of defence—and, fortunately for us, often comes off victorious.

IS ANTISEPSIS A FAILURE?[1]

By GEORGE ERETY SHOEMAKER, M.D.,
OUT-PATIENT SURGEON TO THE UNIVERSITY AND PRESBYTERIAN HOSPITALS.

Strange as it may seem, outside of a comparatively small circle of surgeons, from time to time there are heard suggestions, which occasionally appear in print, that the system of Listerism, so called, is a failure. It is not very uncommon to hear someone say that in a given case "every antiseptic precaution" was adopted, but the result was bad. The speaker would have one believe that he had done his part, and that it is the whole system that is unsatisfactory. Now it is worth while briefly to consider where the difficulty lies; and without entering upon a discussion of asepsis as opposed to antisepsis, of absence of dirt *versus* sterilization of dirt, without advocating special methods or dressings, attention may be drawn to the practical difficulties that interfere with success and lead to misunderstanding.

A few men like Mr. Lawson Tait vigorously attack the so-called theory of "Listerism," while they themselves carry out the principles underlying its success. The reputation of Mr. Tait, however, rests upon his operative work, and not upon his opinions or his explanations of his success. When, in characteristic style, he says (*British Medical Journal*, September 27, 1890, p. 728): "The tone and attitude adopted by Sir Joseph Lister, at Berlin, clearly show that the whole sad business is on its last legs;" and, again, when he refers to "his [Lister's] old dead theory," and to the new cyanide dressing as "the last phase of this astonishing craze" (p. 732), the harm that he does is not great among men who, especially in general surgery, are doing the best work. These cannot work for a day without discovering for themselves that their results are better or worse according to their microscopical and chemical cleanliness in operating. Active surgeons do not care how Mr. Tait explains his good results. He might refuse to accept the law of gravitation, if he chose, but so long as he did not violate it, so long as he refrained from walking out of windows or off precipices, his opinion of the law would matter little. Most men care little that he denies the evil potency of germs, and relies on removing decomposable material from his wounds; they remember that he deals with a peculiar membrane and its neighborhood, that he is punctiliously clean in his work, and they will permit him to attack Sir Joseph Lister personally and his impregnable principles to his heart's content—those principles meanwhile receiving the widest practical application.

The harm Mr. Tait can do is in unsettling the mind of the man who is beginning his work; and, worse than that, his writings tend to salve the consciences of those who have had no training in genuine aseptic methods, who fail consequently to carry them out, and who joyfully hail any champion who even seems to justify their indifference.

But even among a better trained class of men, does not one often see a lamentable failure to grasp the essential ideas of surgical cleanliness? There are to-day hundreds that apparently persuade themselves that mopping a 1:20 carbolic acid, or 1:1000

[1] Read by title before the Section of Obstetrics and Diseases of Women, American Medical Association, May, 1891.

"bichloride" solution rapidly about a wound-area constitutes, as the phrase goes, using "every antiseptic precaution." There are men who will use chemicals on a septic patient and not change infected bedding. There are men who will go to an operation with the joints of their scissors, the locks and serrations of their hemostatic forceps, the eyes of their needles, choked with dried blood, or worse material, from the last operation. They never boil an instrument; their conscience is satisfied with the carbolic acid in the instrument-pan. Some men wash their hands no better before an operation than before dinner. When an instrument or a sponge drops to the floor they may rapidly rinse it and use it again. There are other men who have trained nurses, sterilized dressings, and boiled instruments, but who, after they have washed for the operation, shake hands with a spectator, put a hand in a pocket, remove instruments from an old, blood-stained case, help carry a table, handle dusty bottles, or use a handkerchief—yet say they use every antiseptic precaution. These men know better. What is lacking is careful self-training and what may be called an aseptic conscience. What is wanted is a realizing sense of the difficulty of getting things clean and of keeping them so. Bichloride covers a multitude of sins when it can be used freely, but when it cannot be so used carelessness tells in abdominal surgery.

Carbolic acid solutions as practical sterilizers are a delusion and a snare. They at best work slowly. Unless too strong for comfortable or safe handling, they do little good, and they do enormous harm by quieting the conscience of the man who ought to spend more time washing his hands; yet how many times does one see them relied upon when they only cover dirt. Many text-books, especially revised editions of the older works, are written from a carbolic acid standpoint. Antisepsis is a failure when it is superficial.

In a recent case of laparotomy, referred to by the operator's permission, the stitches cut out and the wound opened, though it afterward closed by granulation. The operator had been cleanly, but the fault was traced to a nurse who had handled the silk with infected fingers.

In another case the paraphernalia were elaborate and the preparations minute. During the operation the chief assistant seized a falling ether bottle, old and very dirty; yet, without the slightest effort to cleanse the hand, it was soon in the abdominal cavity. The patient died two days later of peritonitis. It may have been a mere coincidence.

In a vaginal hysterectomy case by a very active surgeon, many proper precautions were taken to secure external asepsis, but at the close of the operation *five spectators in turn*, with unsterilized hands, examined the wound, while the operator did not follow this exposure even by a douche.

A few days ago, in a hospital, a major operation was in progress. The lecturer had dilated upon the beauties of the antiseptic method. His catgut proving defective, an ancient open box of unprepared silk was brought. An unwashed hand threw a quantity into the instrument-pan, from which a piece was taken when scarcely wet, to be immediately placed upon one of the largest arteries in the body. A weak link breaks a strong chain.

In a hospital case of my own requiring careful dissection about the face, an assistant unobserved obtained an instrument used a few minutes before in laying open a suppurating bubo. In two days the wound-area underneath the sterilized dressing was one large abscess.

In an emergency, lately, the writer asked at a drug-store whether they had antiseptic gauze. "Oh, yes." And, before a word could be said, the druggist had opened a large tin box beautifully decorated, and had unrolled a quantity for inspection. He was, of course, told that while that might have been antiseptic gauze once, it had been ruined as such by his handling—a proposition that completely failed to enter his mind. No doubt that identical roll of gauze has since been retailed (part of it had been sold already), and it is to be feared that there are physicians who would buy it measured by the yard at his counter, yet hardly realizing that as a clean dressing or packing it was utterly worthless. But why multiply instances to show that antisepsis, when neutralized by some single mistake, is a failure. Which should be blamed, the system or the application?

The war between asepsis as opposed to antisepsis is a minor issue. The great fact remains that the principles of cleanliness underlying both, though adopted theoretically throughout the world, are really carried out most imperfectly by the majority of hospital internes, nurses, and some general practitioners in town and country, and, it must be said, even by many otherwise most excellent and estimable surgeons. Let no man venture to criticise methods that he has never fairly tried; let each also bear in mind that through his lack of patient personal training, though honest, his trial may be superficial, and therefore faulty.

Then, in answer to the question, When is antisepsis or asepsis a failure? one may say: *Never*, if real; *always*, if imperfect. There is no doubt that the great principle of cleanliness in surgery, whether obtained by soap, hot water, dry heat, or chemicals, has "come to stay," and the sooner all concerned act upon that principle and ignore personal discussion, the better it will be.

3727 CHESTNUT STREET.

TWO AVOIDABLE CAUSES OF STILLBIRTHS.

By PETER McCAHEY, M.D.,
of Philadelphia.

Statistics show that fetal mortality has not appreciably diminished during the past century. Now, as in 1791, the proportion of stillbirths to children born alive is as 1 to 30. Out of 750,000 children born in the United States every year, 25,000 are dead when born. This is exclusive of premature births, and the multitude of abortions, accidental and intentional.

When we reflect upon the national loss implied by these figures, and upon the anguish inflicted upon the mothers who have borne so much travail only at last to behold the inanimate bodies of their children, it would seem incumbent upon us to try to lessen this frightful mortality. To do this, the principal causes of stillbirths must be recognized. Jörg and other observers, and recently Dr. M. Richardiere (*Gazette des Hôpitaux; New York Medical Journal*, July 18, 1891), have noted that "meningeal hemorrhage constitutes one of the most frequent causes of death in the newborn," that the meninges are highly congested, that sub-pleural extravasations are frequent, and that there is no evidence of any previous inflammation.

Now, it is a curious fact that the post-mortem appearances thus noted in the large majority of stillbirths are almost identical with those found in men dead after having been subjected to high atmospheric pressure in caissons. Dr. Jaminet, the medical supervisor of the men employed at the St. Louis bridge, in his work on *The Physical Effects of Compressed Air*, states that in all the post-mortem examinations of the dead caisson employés "the brain and cord were highly congested, overcharged with blood."

Dr. A. H. Smith, of Brooklyn, who was the medical director of the men employed in the caissons during the building of the Brooklyn bridge, in his work on *The Effects of High Atmospheric Pressure, Including the Caisson Disease*, says: "The constant lesion in fatal cases of caisson disease is congestion of the brain or spinal cord. . . . This congestion may affect both the meninges and the substance of the brain and cord. Extravasations of blood, hypostatic congestion of the lungs, congestion of the abdominal viscera are also noticed."

If to these observations it be added that the fetal heart is slowed during the contraction of the uterus and that the adult pulse is slowed in the caissons, there is nothing wanting to show that the cause of death in both classes is the same—exposure to the influence of compressed air.

There is, however, another cause of fetal death during labor—the filling up of the air-passages with the residual liquor amnii, mucus and meconium. Buhl (*Year-book*, 1864, p. 415) stated that his "post-mortems of twenty-seven children, dying during or shortly after birth, demonstrated that eleven of them were destroyed by obstruction of the air-passages with meconium and mucus." It is probable that in some of these cases the meconium floating in the liquor amnii was drawn into the trachea by premature inspiratory movements, but in others it was doubtless forced through the mouth and nose by the same force that in the mother ruptures the uterus and the perineum, and disarticulates the pelvis, and in the child causes meningeal hemorrhage, cranial fractures and other severe lesions—the unrestrained force of the heated and compressed uterine air.

Both of these sources of danger to the fetus can be reduced to a minimum by the use of an intra-uterine safety-tube, first, to draw off the residual liquor amnii, so that none of it may remain to be forced into the air-passages of the child; and, secondly, to lessen the intra-uterine air-pressure, whenever it appears to threaten danger to either the mother or the child.

Previously to my employment of such a tube, I noticed that in cases in which there was apparently a great deal of residual liquor amnii, the children had "phlegm in the throat" for days and, in some cases, had a cough for weeks. In "dry labors," however, and in others, in which all the liquor amnii was apparently discharged when the membranes ruptured, the children had "no phlegm in the throat," neither were they troubled with a cough.

1413 South Tenth Street.

CLINICAL MEMORANDUM.

TWO CASES OF PYO-PNEUMOTHORAX.

By CASPAR W. SHARPLES, M.D.,
of Seattle, Wash.

A. D., thirty-nine years old, made application for admission to the poor-farm, giving in brief this history:

He was a cook in a large hotel and subject to many sudden changes in temperature. Four months previously he began to cough. In addition there developed shortness of breath, hectic fever, night-sweats, etc., together with other phenomena of phthisis.

There was percussion flatness over the lower portion of the right lung, suddenly changing to hyper-resonance, and dulness over an area nearer the mid-sternal line, as well as posteriorly. Two weeks later the patient died. At the autopsy the pleura was found much thickened and distended with gas and fluid. The gas, as it escaped, on the application of a light refused to burn. The fluid consisted of two quarts of thick, offensive pus, as well as a large quantity of lymph at the bottom of the sac, the lung being adherent to the costal pleura by two bands. The lung was firm and compressed, expanding but little

on attempts to inflate it. As the air was forced into the lung, pus and air escaped from two of three visible openings that communicated with a large cavity. The largest opening or perforation was at the antero-inferior portion of the upper lobe and was one-half by three-quarters of a centimeter in size. A bristle introduced at this point and passed upward and backward, at a distance of five centimeters, reached the second opening, one centimeter below which, in turn, was found a third. Each of the latter was quite small, having a diameter of not more than one and a half millimeters. There were thus three distinct perforations of the lung, all communicating with one tuberculous cavity. Also noteworthy are the rapid progress of the case and the occurrence of pyo-pneumothorax in so short a period.

The second case was of a year's duration and presented nothing of special interest except the trabeculæ running through the fluid at every point. In number there were about twenty-five—some binding the costal pleura to the lung, others the diaphragmatic pleura to the lung, and still others attached to both the costal and diaphragmatic pleura, forming the bases of triangles.

The cavity had a capacity of three and a half quarts, and contained five pints of pus and lymph. In this case, as in the other, the escaping gas did not burn on the application of a light. The perforation was one centimeter in diameter and represented the extremity of a tortuous cavity passing through different parts of the lung. This cavity was at no place of large diameter.

ORIGINAL LECTURE.

VARIETIES OF CHANCRE—THE PRECORDIAL UNEASINESS OF SYPHILIS—ALOPECIA—SYPHILITIC ERUPTIONS, THEIR DIFFERENTIAL DIAGNOSIS AND TREATMENT.

Abstract of a Clinical Lecture
delivered at the New York Post-Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY AND SYPHILIS.

THE first patient presented to the class was a man, twenty-three years old, who four weeks before, in a fight with another man, had been bitten on the lip. The slight break in the skin did not heal, and about one week later the lip began to get worse and swell. At present there is on the upper lip a large, sharply limited ulcer, the surface of which is excoriated, distinctly elevated and papillomatous; the ulcerated portions are of a grayish color, but the margins are of a brownish tint; there is some induration, but it is not marked. In reply to the inquiry by one of the class whether the lesion was a chancroid, Dr. Taylor said: Chancroid can almost be excluded by the great rarity of chancroids of the lip, not more than forty cases of the kind being on record. Among that number was one reported by Dr. Taylor about seventeen years ago. In this case the lesion is an exuberant one, and not in any sense of an ulcerative character. A history of a bite on the lip, which instead of healing up becomes the seat of a hyperplastic growth, is always extremely indicative of syphilis. If the sore were a chancroid, the surface would be ulcerated and depressed, instead of being, as in this case, the seat of thickening and new growth. The lower lip is the more common site for chancres upon the lips. Again, this case presents marked enlargement of the cervical glands; it is a rule, to which there are few exceptions, that the glands in the immediate vicinity of the port of entry of the syphilitic virus are those that are most affected. In certain cases that have been reported as peculiar and rare for the reason that the cervical ganglia have been greatly enlarged, the initial lesion was in all probability seated on the tonsil, where it had escaped detection. Had chancres been about the tongue or tonsils, there would most probably have been such an enormous glandular enlargement as to constitute deformity. If the cervical glands only are enlarged, one would expect a lesion of the oral cavity. This patient is in the primary stage of syphilis; hence it is too early for general manifestations. Chancres of the lips are not at all uncommon; patients will frequently seek advice for a cold sore which they say will not heal. Examination in the early stages shows the sore to be doughy, although later on induration is present. Any such persistent ulceration about the lips is indicative of syphilis rather than of cancer, particularly in persons under forty years of age. The syphilitic sore will be much more rapid in progress than cancer, and it will be accompanied by early and great enlargement of the cervical glands, while in the vast majority of cases the age of the patient is in itself sufficient to exclude cancer.

The patient must first be made to understand that he is a contagious element in the community, and that he must have exclusive spoons, knives, forks, drinking-cups, tobacco-pipes, towels, and the like. The local treatment is to apply equal parts of Lassar's paste and blue ointment, as a plaster, to the lip, to be changed as often as contaminated with the secretions. Externally, mercurial ointment is early and imperatively demanded; for, in this case, it will not do to await the development of secondary symptoms. The treatment should consist of inunctions of thirty grains of the ointment once daily for six days, then to be omited for two days. The inunctions should be applied to the upper part of the body and neck until there are indications of an erythema or an eczema, for it is of the first importance that the lymphatics in this region should be both promptly and efficiently treated.

The next patient, a man, twenty-seven years old, stated that three months before, two weeks after coitus, he had noticed a sore on the penis. Examination showed in the middle of the dorsal surface of the penis a slightly indurated sore, the edges of which were covered with a scab. There was also balanitis and gonorrhea. The patient denied having previously had any eruption, but stated that during the month before he had suffered from nocturnal headaches and pains in the bones. In addition to this, he had severe pains in the chest, increased by deep breathing or upon exertion, together with pains in the submaxillary glands, aggravated by movement of the jaw.

About seventy per cent. of all chancres upon the skin of the penis are syphilitic. This patient has what is known as an ecthymatous chancre, *i. e.*, one presenting a crust surrounded by a reddish halo, and with no evidence of any activity. This lesion usually begins as a

papule or as a slightly excoriated patch. After a while the infiltrated patch becomes reddened, and a serous or sero-purulent discharge takes place and dries into a crust. This patient says that this chancre has remained for the past two months just as it is. It is an illustration of a moderately hard chancre. In what is known as the "mixed chancre," chancroidal pus is deposited upon a hard chancre, giving rise to active destruction; in other words, a chancroidal influence is superadded to the hard chancre. Dr. Taylor laid stress upon the fact that hard chancres of the skin of any part usually appeared as scaling papules or as moist papules or patches that become excoriated and to which the term ecthymatous chancre is applied.

This patient says that he has suffered from pains in the chest and a smothering sensation in the precordia; in some cases the suffering is so severe as to require the administration of opiates; yet an examination of the heart and lungs detects no morbid condition. The trouble probably arises from disturbed innervation of the celiac axis or of the cardiac plexus. At times, the pain is in character and severity not unlike that of angina pectoris. This patient has been given a mixture of diffusible stimulants with the object of excluding pains that might be due to a cardiac affection. As expected he has not derived any benefit from the medicine. A change to mercurial treatment by inunction will undoubtedly give speedy relief.

The next patient was a woman, twenty-four years old, who said that three months previously she had first noticed a small sore near the groin, which afterward became ulcerated. Examination showed an ecthymatous chancre at the inner side of the thigh, about two inches below the vulva. Chancres are also found about the hypogastrium; when found in such unusual situations they point to infection during sexual intercourse in some peculiar position. This woman was probably infected from numerous patches or condylomata on the scrotum of her consort. The eruption appeared about six weeks ago, and she suffered somewhat from nocturnal headaches; but the most striking feature of her case is the extensive and profuse alopecia, affecting not only the scalp and eyebrows, but even the legs and mons veneris. The alopecia in this case has appeared quite early; it is usually first seen in the third month of the disease, after the eruption is well developed and the patient begins to feel weak and to lose flesh. It is also usually gradual in onset, the hairs loosening and pulling out readily; the hairs, when examined, are seen to be thin and dry and show no bulbous expansion upon the ends. The scalp often looks quite dirty and more or less scurfy, although its condition may readily be overlooked. Sometimes there is a partial loss of the hair of the eyebrow; sometimes there is a splitting just over the supra-orbital notch, or the hair falls out leaving jagged spots, and bearing some resemblance to alopecia areata. The papular, pustular, or ulcerative lesions about the head lead of course to more or less loss of hair. As alopecia may follow any long-continued adynamic disease, the history of the case is an important aid in diagnosis.

One often hears the unfortunate statement that when a physician is giving mercury internally, he is doing his whole duty; but this is not true, for it is of vital importance to combine local with general treatment. The prognosis is often said to be bad in these cases, and so it may be, if internal treatment alone is employed; but when both methods are combined, even severe cases, like this one, are likely to have their hair restored.

After thoroughly cleansing the head, it is to be washed two or three times a day with a 1 : 2000 or even 1 : 1000 solution of bichloride of mercury; and once or twice daily the following lotion is to be vigorously rubbed into the scalp:

℞.—Tinct. cantharidis . . . 1 ounce.
Tinct. capsici . . . ½ ounce.
Aquæ . . . . ad 4 ounces.
Misce et ft. lotio.

In private practice, it is well to add a little Cologne water. Internal mercurial treatment has been instituted for some time.

The attention of the class was next directed to a young man, a bartender, twenty-two years old, who illustrated the form of eruption known as a miliary papular syphilide. Two months after coitus, or six months ago, a single sore, having an indurated base and discharging pus, appeared on the penis; two weeks later, a papular eruption suddenly appeared over the entire body. This subsequently became pustular, then squamous. He has had no alopecia, but suffers from headache, sore-throat, pains in the bones, and is rapidly losing flesh and strength.

This miliary papular syphilide consists of a syphilitic infiltration around the hair and sebaceous follicles, resulting in the formation of small papules; on the apices of some of these are found purulent crusts. This condition was formerly, although very improperly, described under the name of "syphilitic lichen." Similarly, if a patch filled up with papules becomes irritated, the eruption becomes masked, and the result is what was formerly known as "syphilitic eczema;" but these are only cases of syphiltic eruptions simulating other eruptions, and the nomenclature therefore is faulty. The headache, a result of hyperemia of the meninges, is referred to the convexity of the head, as in this patient; it sometimes involves the frontal and supra-orbital regions, or the area of distribution of branches of the fifth nerve. The pains in the bones are due to a mild hyperemia of the periosteum. Mercurial pills might be given this patient for a long time without much effect. He is now having baths followed by mercurial inunctions.

Another variety of eruption was found in a woman, twenty years old, in whom the initial lesion had appeared two months before as a sore on the genitals. She has had no alopecia, but she suffers from nocturnal headaches. Six months ago, a rash appeared in single points, which afterward coalesced, and still later became scaly. At present the eruption might be mistaken by the inexperienced for a papular eczema; the importance of an early diagnosis in such a case is apparent. There is an absence of the redness, itching and general inflammatory symptoms seen in eczema; the eruption has lasted for several months without showing any disposition for the papules to fuse together. There is a slight tendency to the formation of rings. The eruption is usually present in one of the following forms, viz.: (1) in little groups, as seen in the last patient; (2) diffused in one or more regions, and (3) in the form of rings. This patient is

of good physique and will do well with proper treatment.

Dr. Taylor presented to the class still another form of syphilitic eruption, in a married woman, twenty-seven years of age, who about fifteen months before had had a round sore, with indurated edges, upon the genitals, that in about six weeks was followed by a general eruption. On admission to the Charity Hospital the body and extremities were found covered with scaly patches of rupia, that gave rise to so much itching as to necessitate the administration of morphine. There has been some alopecia; the headache, that has been quite troublesome, has usually begun about 11 A.M. and lasted into the night. Syphilitic headache usually begins toward dusk. Before admission the woman had been treated with mercury to the point of salivation. Since admission she had been treated locally with inunctions of mercurial ointment and washes of bichloride solution, and internally had received pills of bichloride of mercury. Dr. Taylor strongly disapproved of the administration of such pills, which served chiefly to irritate the stomach, and did not admit of putting the patient properly under the influence of the remedy. This case is an excellent illustration of the ravages of rupia, for there still remain upon the face and neck a number of large, hypertrophic cicatrices. Sometimes the burning, itching, lancinating and throbbing pains from these cicatrices are terrible. The eruption is usually extensive, particularly on the back and outer aspect of the legs. Under proper treatment, the scars will be replaced by thin parchment-like cicatrices, and as the hyperplasia leaves the scars these unpleasant symptoms will disappear. The suffering is probably due to peripheral irritation caused by the fibrous tissue contracting upon the ends of the nerves.

HOSPITAL NOTES.

WOMAN'S HOSPITAL, PHILADELPHIA.

CLINICS OF DR. JOHN B. ROBERTS,

Reported by DR. MARY E. ALLEN,
DEMONSTRATOR OF SURGERY.

1. Fatty Tumor of the Omentum; Removed by Laparotomy; Recovery—2. Tuberculous Abscess of the Abdominal Wall Simulating Malignant Disease of the Transverse Colon—3. Localized Suppurative Peritonitis Causing Jaundice; Cholecystotomy, Followed by Death.

1. FATTY TUMOR OF THE OMENTUM; REMOVED BY LAPAROTOMY; RECOVERY.

E. C., a married woman, twenty-seven years of age, gave a history of good health until within the last four months, when she began to suffer from weakness and general debility. Five weeks ago she noticed that her abdomen was beginning to enlarge. Since then it has rapidly increased in size, and incommodes her by reason of the pressure-symptoms and the weight of the fluid. On examination there were evidences of liquid that changed place as the patient shifted her position from the back to either side. There was also a well-defined, flattened, solid mass immediately under the abdominal wall near the umbilicus.

Dr. Roberts stated that the three most common conditions that give rise to ascites are diseases of the heart, of the liver, or of the kidneys. In this case, however, there was no albumin in the urine, nor anything to indicate disease of the kidneys. The heart-sounds were normal and thus that organ was excluded as a cause. There was no appearance of jaundice or enlargement of the liver, or other apparent derangement of that viscus. This condition might also be caused by tuberculous peritonitis or a malignant tumor. The presence of what seemed to be a solid mass against the inner surface of the abdominal wall seemed to point to the latter cause. An exploratory incision was, therefore, determined upon, and a very small opening made in order to insert the finger. Two quarts of fluid slowly drained off and a flat, solid tumor was found adherent to the anterior abdominal wall and the transverse colon. The incision was enlarged downward, cutting through the mass of the tumor, giving rise to some bleeding. The tumor seemed to be in the omentum, and was with great difficulty peeled off from its attachments to the parietal peritoneum and the transverse colon. A number of vessels were ligated before cutting them. After the removal of the tumor, the abdomen was thoroughly washed out with plain sterilized hot water until bleeding had ceased and the water returned clear. The incision in the abdominal wall was about five inches long, and was closed by silk sutures; a short rubber drainage-tube was introduced into the abdominal cavity at the middle of the incision and secured by a suture.

The peritoneum was markedly inflamed at the time of the operation, and adhesions that were readily torn had already formed between the coils of intestine. The chances were, however, so great that the case was malignant and that the tumor would return at an early date that no attempt was made to break them up. After the stitches were tied antiseptic dressings were applied and the patient placed in bed in good condition.

The operation was performed February 14, 1890, at which time her temperature was normal. There was very little rise of temperature after the operation, the highest being 101.2°. She made a very good recovery, sitting up in bed on the 8th of March, and was discharged from the hospital, well, on March 22d. The patient, eight months after the operation, called at the hospital in good health.

Microscopic examination of the tumor, made by Dr. Marie K. Formad and Dr. H. F. Formad proved it to be not a malignant tumor as was at first feared, but a lipoma of the omentum.

Death would certainly have ensued if this growth had not been attacked. The fact that omental growths are so frequently malignant has made surgeons feel very doubtful of permanent cure after their removal. This case makes the extirpation of omental tumors appear much more hopeful, since microscopic examination alone can determine their nature. Dr. Roberts had a few weeks previously assisted Dr. L. W. Steinbach to remove a growth that had exactly the same clinical characteristics, and was in the same way adherent to the anterior abdominal wall and had the transverse colon imbedded in it. This case, however, did not terminate so favorably. The woman left the Jewish Hospital in three weeks, apparently cured; but was readmitted a few weeks later and died soon after. The growth in this

latter case was supposed to be a sarcoma, though it is not known whether or not a microscopical examination was made.

2. TUBERCULOUS ABSCESS OF THE ABDOMINAL WALL SIMULATING MALIGNANT DISEASE OF THE TRANSVERSE COLON.

A. H., a colored girl, sixteen years of age, entered the hospital for an obscure swelling of the abdomen. She belonged to a tuberculous family, her father having died of consumption when she was four years of age. She had also lost a brother and a sister, but did not know the cause of their deaths. She herself seems to have enjoyed a fair degree of health from childhood, but for her age appears very undeveloped and has never menstruated, except a very slight show about a year ago.

She first became aware of something wrong with the abdomen about eight months ago. There was a tender spot in the abdominal wall on pressure when she stooped over the washtub. From that time the abdomen began to increase in size, and sharp pains would from time to time shoot through it. On admission she had a very poor appetite, and was also afraid to eat much because of the after-distress which food occasioned. She was, therefore, very anemic. The tender spot extended all around the umbilicus, and a considerable distance to either side. The urine was normal, as were the heart-sounds. There was tuberculous infiltration of the right lung. On entering the hospital she was put to bed and acid baths used over the liver and abdomen generally. Five drops of syr. ferri iodidi were given after meals. Her temperature on admission was 99.4° and continued above normal. It was, therefore, decided to make an exploratory incision and ascertain the nature of the swelling that in position and outline resembled a growth within the abdomen. Omental or colic malignant disease was strongly suspected.

She was accordingly etherized and prepared for operation with every antiseptic precaution. A very small incision was at first made above the umbilicus down to but not through the peritoneum. The mass could be felt below the fingers and toward the pubes, and the incision was accordingly increased downward. The incision was carried around and below the umbilicus, and when all the abdominal muscles or rather the tendons of these muscles had been divided, a cavity containing tuberculous pus was reached. The abscess was thoroughly evacuated, curetted, and washed out with filtered boiled water. It was a large cavity extending across the abdomen for about four inches on each side of the median line. The cheesy pus was contained in a space between the muscles and the peritoneum, which naturally was thicker than normal. Two drainage-tubes were used, extending to either side of the incision, and were secured in place by sutures. The incision was left open to heal by granulation and antiseptic dressings were applied. Two hours after the operation the temperature was normal and did not rise higher than 101.3° after the operation. The drainage-tubes were frequently washed out with a two and a half per cent. carbolic acid solution, and were removed February 16th, the healing of the wound having progressed favorably. After this it was washed twice daily with the carbolic acid solution and an iodoform suppository inserted each time. The patient was discharged well after a somewhat long convalescence owing to the large cavity that had to close up by granulation.

3. LOCALIZED SUPPURATIVE PERITONITIS CAUSING JAUNDICE; CHOLECYSTOTOMY, FOLLOWED BY DEATH.

A married woman, forty-two years of age, came first to the out-clinic of the hospital, on account of severe attacks of pain in the region of the gall-bladder. These attacks she had had periodically for sixteen years, and by good physicians they had been pronounced to be biliary colic. Nine months before, the paroxysms increased in severity, the pain radiating from the gall-bladder to the shoulder, and lasting for three or four days. They were only relieved by morphia. She had not at any time been jaundiced. She first noticed a lump in the side, after the attack nine months ago. Her first visit to the clinic was made on April 21st, at which time she was suffering much pain and was very much constipated. Purgatives were given with temporary relief. During a visit, three weeks after, she was suddenly seized with a paroxysm so severe that she was unable to leave, and was accordingly placed in bed in the wards. Cups were applied over the loins, and counter-irritation to the abdomen. Morphia was given hypodermatically. There was an excessively tender mass, about the size of a fetal head, in the epigastric, umbilical, and right hypochondriac regions. The urine contained albumin and biliary coloring matter. The temperature was 103°; pulse irregular and feeble, and counted 136 to the minute. Constipation existed. Light-colored stools were obtained by medication. Morphia was given when needed to relieve pain, and the cups and counter-irritants repeated when necessary. Sodium phosphate, ℥j three times daily, was ordered, followed by enemata of warm water and five grains of quinia in suppository, and spt. etheris nit., f℥ss in water, by the stomach every three hours. The patient was beginning to be jaundiced.

May 14th and 15th: Temperature 103.2°; pulse 120; jaundice deepening. Sodium phosphate replaced by half-teaspoonful doses of spirits of chloroform every two hours. On the 16th, ice-bag used for severe headache. Temperature 102.6°. Treatment continued the same. Stools remained small and generally colorless. One grain of calomel given on the 22d, and stimulation begun with whiskey, f℥ss in milk, three times a day. On the 27th, olive oil, in f℥ss doses, was substituted for the chloroform. The temperature remained at about 102°–103° in the morning and a degree higher in the evening. There were chilly sensations on the 27th.

An operation having been consented to as a last resort, the patient was thoroughly cleansed and etherized on May 29th. It was decided to make the incision in the right hypochondriac region immediately over the tumor, the more readily to reach the seat of trouble. The abdomen was markedly tympanitic, and the whole surface deeply jaundiced. No difficulty was encountered in incising the abdominal walls and very little hemorrhage occurred. When the peritoneum was reached it was found to be thickened and opaque. It was raised upon tenacula and incised, the omentum pressing into the opening immediately. Omentum and distended intestines were kept back by flat sponges and the gall-bladder brought into view. The gall-bladder was greatly dis-

tended, and yet was so bound down by adhesions as to make it impossible to bring it up sufficiently to stitch it fast before opening it. A trocar was, therefore, thrust into it after protecting the abdominal cavity by sponges, and about a pint of grass-green bile evacuated. Below the bladder, and binding it to the transverse colon and liver, was an inflammatory mass the nature of which was not made out at the time of the operation. The edges of the opening in the collapsing gall-bladder were kept elevated by catch forceps and the opening was enlarged sufficiently to explore the interior with the finger. The walls of the bladder were velvety and thickened, but no stone could be found, even after following the cystic duct with a probe and thoroughly exploring the course of the canal.

The reason for the great retention of bile and the universal jaundice was still obscure; and the operation was completed by sewing the edges of the opening in the gall-bladder to the parietal peritoneum along the edges of the abdominal incision, the margins of which were drawn in considerably because of the impossibility of loosening the gall-bladder from its adhesions. The abdominal cavity was carefully irrigated with plain boiled water and dried with sponges. Two drainage-tubes were placed, one running transversely, the other down toward the pelvis. A long drainage-tube of small caliber was also placed within the gall-bladder after thoroughly irrigating its interior. The orifices of all the tubes were protected by rubber dam and sponges, that in the gall-bladder being entirely separated from the others. Abundant layers of antiseptic gauze were placed about the wound after it was sutured and the whole kept in place with a many-tailed flannel bandage. The patient was put to bed in a fair condition and the foot of the bed elevated to encourage the flow of blood to the brain. She was comfortable during the afternoon, but during the night the temperature rose with the onset of acute sepsis and the patient died at 1.30 P.M. on May 30th.

An hour after death a partial autopsy was performed through the site of the operation, revealing evidences of extensive inflammation at some preceding period. The adhesions were very firm and the inflammatory mass that bound everything together was ascertained to be a peritoneal abscess containing about two ounces of greenish ill-smelling pus. No stones were found, and it was no doubt the pressure of this mass upon the gall-ducts that caused the retention of bile and the jaundice.

CURRENT LITERATURE.

EXCISION OF CHANCRE.

WICKHAM has expressed himself as strongly opposed to the theory and method of Jullien in the management of the chancre. The history of excision of syphilomata does not date back more than a dozen years. Wickham considers surgical interference with the chancre as useless. He gives a brief *résumé* of the article of Jullien that appeared in *L'Union Médicale*, 1891. The latter insisted that the excision should be total, it being requisite to invade healthy tissue, following the precepts that regulate operative procedure in the case of cancerous tumors. It is not necessary to produce general anæsthesia; an application of cocaine, or, better, an interstitial injection, will suffice. Wickham regards methodical excision as too painful an operation for cocaine anæsthesia, unless the chancre be situated upon the prepuce. Jullien observes that after the excision of a chancre the resulting cicatrix is scarcely, if at all, visible. Leloir, of Lille, however, holds that, save exceptionally, the result of the excision of a chancre is to produce only an apparent cicatrix. In the course of the last ten years Jullien has excised eighteen chancres. Only four of the patients seem to have been entirely cured of the general disease. The others have all presented manifestations of constitutional syphilis. Nevertheless, Jullien has concluded that "the excision of the primary syphiloma is an operation not only legitimate, but even useful, often beneficial, and at times heroic." In short, according to his view, the individual is not infected when the chancre appears. To excise the indurated chancre in its incipiency is to prevent the appearance of the secondary manifestations, or, at least, to attenuate them in great measure. Such a theory is seductive; demonstrated as scientifically correct, it would furnish a powerful lever in preventing the consequences of syphilis, at times so terrible; but a number of facts, experimental and clinical, are opposed to this idea. The consensus of opinion among syphilographers is also against such a theory. In 1881, Mauriac concluded that "excision is useless; that it does not constitute an abortive treatment for syphilis; and that it does not attenuate the immediate or remote consequences of this intoxication. In 1880, Quinquaud had three failures; Terrillon, one; Zeisel, five; and Klink, one. Many others have failed to secure satisfactory results. Vidal, Rollet, Diday, Brocq and others enroll themselves as opposed to the theory advanced by Jullien. Especially do these experienced writers reject the assertion that the manifestations of the secondary stage of syphilis are attenuated by the excision of the initial chancre. As Leloir has said, "the benign secondary manifestations are the rule; the grave, the exception." Wickham verifies the truthfulness of this assertion, as demonstrated during the eighteen months of his residence in l'Hopital du Midi. He asserts positively that syphilis is a general disease from the moment of infection. Experimental and clinical facts ill accord with the view of Jullien. Even in the cures reported by Jullien there are possibilities of error. In one, the tonsils were covered with a suspicious-looking eruption; in another, that had not been under observation for eight months, there was a chancrous ulceration of the frenum. In still another there was evidently an error in diagnosis, as the primary syphiloma appeared on the fifteenth day after the impure coitus. In only five instances were the secondary manifestations modified in their intensity. Wickham cites the experiments of Fournier, who, in 1856, inoculated with syphilitic virus patients in the case of whom chancres had been previously excised; the results were negative; this would indicate that the chancre is not a local lesion, but the manifestation of a general condition. Wickham also quotes the results of the experiments of Ricord, formerly a strong partisan of the abortive treatment of syphilis by cauterization. Ricord concluded that cauterization and excision were both entirely useless in preventing general infection of the system.—*La Médecine Moderne*, 1891, No. 10.

THE GERMICIDAL PROPERTIES OF CORROSIVE SUBLIMATE.

As the outcome of experiments conducted in the pathological laboratory of the Johns Hopkins University, Abbott (*The Johns Hopkins Hosp. Bull.*, April 12, 1891) has found "that, under the most favorable conditions, a given quantity of sublimate has the property of rendering inert only a certain number of individual organisms—that is to say, the process is a definitely chemical one, taking place between the protoplasm of the individual bacterium and the sublimate in the solution. The disinfecting activity of the sublimate against organisms is profoundly influenced by the proportion of albuminous material contained in the medium in which the bacteria are present. The relation between the golden pyogenic staphylococci and sublimate is not a constant one, organisms from different sources and of different ages behaving differently when exposed to the same quantity of the disinfectant, for the same length of time. The activity of the organisms that survive the exposure to the sublimate may undergo a temporary attenuation. This attenuation, however, may be caused to disappear by successive cultivation in normal media. By the method employed it was possible to select from a culture the most resistant forms in that culture. Many of the results of previous experimenters, who have assigned to corrosive sublimate more powerful disinfectant properties against the staphylococcus pyogenes aureus in cultures than the observations reported in this paper indicate, are attributable to the neglect of certain precautions now recognized as essential to the proper conduct of such experiments.

"In the light of these facts it is plain that for use in surgical practice the solutions of corrosive sublimate do not possess all the advantages hitherto attributed to them.

"There are at least two serious objections to the employment of sublimate solutions upon wound-surfaces: First, the albumin of the tissues and fluids of the body inhibits the efficacy of, or indeed renders entirely inert, the solution employed; secondly, the integrity of the tissues is materially impaired by the application of sublimate solutions. The first objection cannot be met with certainty, for the surgeon possesses no means by which he can determine the quantity of albuminous material with which his solutions are to come in contact; in any case, this large quantity of albuminous material is an almost insuperable obstacle to complete disinfection with sublimate. The second objection is equally serious. There is sufficient evidence that the normal tissues and fluids of the body possess the power of rendering inert many kinds of organisms that may have gained access. This function is therefore diminished, or, indeed, may be quite destroyed by any agent that brings about alterations in the constitution of these tissues. Just such changes are known to follow the application of sublimate solutions. If, as a result of the application of the sublimate, we bring about in these tissues a condition of superficial necrosis, they are much less able to resist the invasion of infectious organisms than they would have been had they been left in their natural condition.

"There are, perhaps, few substances that possess in a higher degree than corrosive sublimate the property of disinfection in the strict sense of the word; at the same time there is nothing employed for this purpose that requires greater care in the manipulation, in order to obtain the best results. For the foregoing reasons we seem hardly justified in continuing to give to corrosive sublimate the first place in the list of substances that may be employed practically for the purpose of rendering innocuous materials containing the germs of infectious maladies."

A ROLL OF HAIR IN THE FEMALE RECTUM.

At a meeting of one of the Polish societies, Jonszer (*Gazeta Lekarska*, 1891, 18) reported the case of a dark-haired girl, seventeen years old, in whom menstruation had been regular since the thirteenth year, who complained of griping abdominal pains and rectal tenesmus, with a moderate mucoid discharge from the rectum. The stools were at first normal in frequency, but soon there appeared obstinate diarrhea, the stools becoming very frequent (up to a score of times a day). At first they consisted of a thin, yellowish fecal matter, without particular fetor; but subsequently they assumed a whitish appearance, being composed mostly of mucus and highly offensive pus; the abdominal pain and tenesmus increased in intensity. Still later the pain became especially severe about the rectum, and there supervened frequent and refractory vomiting (of greenish, later on greenish-brown, sometimes blood-stained, fluid masses); the patient was unable to retain any food in the stomach; her general state rapidly growing from bad to worse (in spite of assiduous treatment for "dysentery," "enteritis," and like affections, by one practitioner after another). A number of months later she happened to come under the author's observation, who (apparently suspecting some intestinal obstruction near the rectum) resolved to make a digital exploration *per anum*. The examination revealed the presence of a sponge-like foreign body that could be extracted (by means of the thumb and forefinger introduced into the rectum as high up as was possible) only with considerable difficulty. It proved to be a bottle-shaped, fairly hard, felt-like mass of blonde hairs, glued together by offensive pus and mucus. The "bottle" measured eighteen centimeters in length and eight in diameter (about the base), individual hairs averaging forty centimeters. A large quantity of a fetid, muco-purulent matter welled out from the anus after the extraction, the discharge persisting for about a week. A steady, though rather slow, recovery ensued, the appetite, stools and sleep returning to the normal in about five weeks, while anemia and emaciation disappeared much later. According to the author's view of the case, the rectal hairy mass resulted from the patient having been in the habit of swallowing her own hairs. The somewhat awkward circumstance that the rectal hairs were of a color entirely different from that of the head, Dr. Jonszer is inclined to attribute to some obscure chemical influence of the gastric and other digestive juices on the swallowed hairy structures. It must be added that the girl absolutely denied having ever been in the habit of swallowing her hair.

[In an editorial note, Dr. Wladyslaw Gajkiewicz (*ibid.*, p. 349) very justly differs from Dr. Jonszer in regard to the nature of the case, and suggests the most plausible explanation, according to which the author had to deal simply with a dermoid ovarian cyst bursting into the rectum. In the same light the case is also viewed by

Dr. K. E. Wagner (see *Vratch*, 1891, No. 18, p. 450). A companion case of a hairy dermoid ovarian cyst bursting into the bladder, reported by Dr. Tchügünoff, of Shadrinsk, may be found in the *London Medical Record*, April, 1885, p. 148.] — *Provincial Medical Journal*, July 1, 1891.

HYSTERICAL STAMMERING.

KRAMER reports an interesting case of hysterical stammering in an unmarried woman, twenty-six years old. Hysterical attacks are said to have first appeared following a surprise and ill-treatment in a wood. Two years subsequently she had two convulsions, separated by an interval of a day. After the second, speech was observed to be disturbed. The disturbance took the form of aphasia; to all answers the patient replied with the single syllable "ma," repeated in rapid succession. After the aphasia had lasted a short time, stammering was observed. At first this was so marked, and the sounds were produced with such evident effort, that one could not possibly understand what was intended to be said. It was evident that the patient understood, and that only the disturbance of speech interfered with reply. This was shown by the fact that in speaking the patient repeatedly began with one syllable; at first the sounds were produced only in the larynx as short expiratory jerks developed by pressure; then they gradually assumed the sound of spoken syllables and were repeated many times; then the next syllable, then both syllables—at first imperfectly, the vowels running into one another, but subsequently becoming more distinct. When the entire word was grasped it was quickly repeated several times, as though to fix it. Having gained the first word, the second was attempted in the same way. Between the individual syllables, as they were uttered, there was a violent hiccough, or whimpering and groaning.

There was no difficulty in writing. The stammering was accompanied by a feeling as though the tongue "were of tin-plate." In fact, the patient could not thrust her tongue beyond her teeth, but moved it to and fro in the mouth, with difficulty and helplessly. Reading was attended with the same difficulty as speaking. The stammering, in its severest form, lasted from a day to a day and a half and then improved; in its milder form the stammering assumed the character observed in weeping. After about ten days the stammering disappeared entirely, to return on excitement. As is usually the case in hysterical affections, the stammering was reproduced after anesthesia with chloroform.

The reasons for regarding the stammering as hysterical are: In connection with an hysterical attack, aphasia occurred for a short time and was followed by stammering that lasted several days. Other symptoms that occurred at the same time are right-sided hemianesthesia and ovarian tenderness, contracture of the right leg, paresis of the right arm, amblyopia and concentric limitation of the fields of vision.

The stammering may be looked upon as a stage of improvement in the aphasia, just as the relaxation of the arm may be regarded as an improvement in the tetanoid spastic paresis that was present at first. As to the nature of this stammering: if mutism corresponds to total paralysis of all the organs concerned in phonation, then in stammering there must be an incoördination in the movements of these organs. As a matter of fact, Ballet and Tissier report having seen variously modified disturbances of motility of the tongue, and in Kramer's case they were also present.—*Prager med. Wochenschrift*, 1891, No. 14.

A CASE OF TIC CONVULSIF.

STEMBO (*Berliner klin. Wochenschrift*, July 13, 1891) has reported the case of a man, thirty-seven years old, with a history of masturbation, in whom at sixteen twitching was observed in the muscles of the neck, which progressively invaded the muscles of the face, of the extremities, of articulation, and the diaphragm. The movements of the tongue occasioned abnormal sounds. From time to time the chin was elevated and the head turned to the left; the upper extremity was extended. At intervals the patient would tap with the palm of his hand the person of one with whom he was speaking. At other times he would stroke the side of the protruded tongue with the index and middle finger of the left hand and then dry the moistened fingers on the head or neck. The manifestations were less decided upon the right side. They were aggravated by observation, ceased during sleep and could be temporarily suppressed by a strong effort. On the street, the patient felt impelled to hurry until he had passed all pedestrians. As he passed or met one he uttered a peculiar expiratory sound. He repeated spoken words, especially bad language. Sensibility was unimpaired. The superficial reflexes were normal. The deep reflexes were exaggerated. The neuro-muscular irritability was heightened. There were no evidences of hysteria. A son of the patient, sixteen years old, presented incipient evidences of the same affection.

PERITONEAL SECTION.

BYFORD (*Transactions Gynecological Society of Chicago*, April 17, 1891) has reported a third series of peritoneal sections, with a comparative study of 159 consecutive cases.

Nature of operation.	Operations.	Recovered.	Died.	Percentage of recoveries.	Percentage of deaths.
Hysterectomy	10	9	1	90	10
Oöphorectomy	16	16	0	100	
Ovariotomy	11	10	1	90.91	9.09
Myomotomy and oöphorectomy	1	1	0	100	
Nephrectomy	1	1	0	100	
Pelvic hematocele	1	1	0	100	
Drainage of abscess	1	1	0	100	
Exploratory incisions	2	1	1	50	50
Incomplete operations	2	0	2	...	100
VAGINAL SECTIONS.					
Hysterectomy	8	8	0	100	
Ovariotomy	1	1	0	100	
Total	54	49	5	90.75	9.25
Complete operations	52	49	3	94.23	5.77

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THE SPELLING OF MEDICAL WORDS.

Early or late every educated and clear-headed man comes face to face with the duty of deciding how he shall spell words that may rightly be spelled in two ways. Most of us shirk the duty, and drift without definite rules or principles, our orthography being almost as illogical and variable as if we had lived three hundred years ago. If, in this condition of mind, one is called as editor to make "a rule of the office" as regards disputed spellings, he may either hide himself behind the breastwork of some one lexicographer to the exclusion of all others, or he may "face the music," and endeavor to determine rules founded upon other principles than those of simple authority chosen by an eye with extreme concentric limitation of the field of vision.

It will not do to say that all this is a matter of no consequence, too trivial to waste thought upon; because, as all educated men know, that would be manifest superficiality and error.

The question of the spelling of medical English is at last, of course, one with the question of the spelling of English generally, and the rules of the special department must be consonant with the laws of the whole language. It is, however, strange that medical lexicographers have shown themselves somewhat indifferent to the trend of general American usage, and that men so busy and independent as physicians still adhere to tedious usages that in great part have been discarded by their philologically more progressive brethren of the lay world.

The conservative mind, scorning innovation, may sneer at changes in orthographic customs, but in a final analysis the most abject philological tory is without a foot of logical ground whereon to plant his feet. Language may be likened to a bicycle that is in a condition of unstable equilibrium, and must move continually if it keep upright. The very language we speak and write is itself different from the language out of which it sprang, simply by the repeated superpositions of changes in pronunciation. It is utter nonsense to think of seizing upon any one moment or phase and saying that here change must stop. The pronounced language is a living, ever-changing, ever-reacting organism. It is the materialized exponent of man's spirit, and, like that spirit, ever becoming other. Change is its most fundamental law. The dead or printed language, which is the representative of the pronounced language, must sooner or later be changed to conform to the living. Thus new dialects and new languages come into being, and thus repeated orthographic changes are constantly necessary. The fetish-worshipper of old orthography can go but a very little way back. He has accepted the changes that were wrought in his language a hundred years ago, but refuses the changes that were made twenty-five years ago and will refuse those that will be made in the next twenty-five years. He no longer writes *colic*, *physic* and *music* with a *k* after the *c*, but he sticks to it that *hemorrhage* and *etiology* and *anesthetic* must be written in the ancient way. His son will accept the shorter way of writing these words that his father spurned, but the son will also resist the reformers of his day as his father is now struggling against the reformers of our day.

Into the vexed question of general phonetic reform we have here no call to enter. There is nobody that does not recognize the ludicrous absurdity of English orthography and the burdens and clogs it imposes on the young mind and hence upon all progress. The fundamental evil and misery consists in the fact that according to current orthography, we have dozens of symbols for one sound and dozens of sounds for one symbol. That the sound of long *e* should be expressed by as many as nine signs is unendurable (*e.g.*, *meet*, *mete*, *meat*, *machine*, *grief*, *receive*, *key*, *people*, *ægis*). All the prominent philologists of America and of Great Britain are agreed

about the evil, and are practically in accord as to the remedy. They say that when etymological considerations do not prevent, all letters useless in pronunciation should be dropped. But this is positive innovation, and the world will accept it slowly. Our especial problem is not to effect desirable novelties in reform, but to choose between changes that have been introduced and that are in various stages of the process of acceptance. It would appear that the principles that should guide us are simple and at the same time fundamental:

1. When the proposed change has acquired a genuine and respectable vogue it should be held worthy of consideration;

2. If it is in conformity with the actual pronunciation, and the drift of tendency;

3. If it does not interfere with etymological considerations;

4. If it lessens labor, friction, and the space required.

5. If inevitable.

As to the first point, it is incontrovertible that the changes advised, or even permitted, by such unexceptionable authorities as the new WEBSTER and the CENTURY dictionaries, must rest on the firmest basis of philological wisdom and of commendable custom. No greater amount of money (with the risks and responsibilities for error that this implies) has ever been invested in such undertakings, and a no more splendid union of philological authorities has ever been enlisted in the preparation of such works.

As to the last point, the certainty of coming changes, it alone might be held decisive. Most of the new spellings advised at the conclusion of this editorial seem absolutely inevitable. If so, why prolong the transitional period? When the genius of our people demands these changes it were best to accept them quickly without shuffling delay and irrational prejudice. We all know the kind-hearted lady who could not bear to plunge her lobsters into boiling water, and was happy in first putting them into cold water which was then brought very, very slowly to the boiling-point.

The greatest bone of contention between the progressists and the conservatives consists in the English equivalent of the Greek αι. Shall we say *hæmorrhage*, and *anæmia*, and *ætiology*, or shall we say *hemorrhage*, *anemia*, *etiology*, etc.? Our belief is that the latter spelling, if not already the more customary, is bound to become so.

A genuine native-born American has an instinctive dislike of an Umlaut, or a conjoined vowel-diphthong. He looks askance at it, very much as a "cow-boy" does at a "dude." The shorter spelling lessens labor and mental friction, is not an etymological sin,[1] and is representative of the common pronunciation. If this position be assented to, it needs no further excuse and explanation of reasons to justify as right and commendable the following rules which have been adopted by the staff and proof-readers of THE MEDICAL NEWS:

1. The English equivalent of the Greek αι (as in αιμα, αισθητος, παιδος, etc.) will be *e*, instead of the elder form *æ*. For example:

Hemorrhage,	Anemia,
Hematemesis,	Uremia,
Hematic,	Hyperemia,
Hematin,	Hydremia,
Hematoma,	Leucocythemia,
Hematuria,	Pyemia,
Hemoglobin,	Septicemia,
Hemorrhoids,	Sapremia,
etc., etc.	*etc., etc.*
Esthesia,	Etiology,
Anesthesia,	
Hyperesthesia,	Orthopedic,
Anesthetic,	Pediatric,
Gynecology,	Ether.

2. The Greek οι will be represented by *e*, instead of *æ*. *E. g.*:

Edema,	Blenorrhea,
Esophagus,	Gonorrhea,
Celiac,	Spermatorrhea,
Cecum,	Otorrhea,
Homeopathy,	Apnea,
	Dyspnea,
	Orthopnea.

3. Liter, Center, Meter, Fiber, *etc.*, will be so written. (Chancre is correct—for a special reason.)

4. Gram, Previa, Precordia, Fetus, Fetor, Fetid, Licorice, Dram, Labor, Rigor, Color, Gluteus, Gluteal, Ozena, Rachitis, Rachialgia, *etc.*, are here properly written.

5. Leucomaïne and Ptomaïne should be written with the dieresis.

6. Unless we are brave enough to do without authorities, we shall have to submit somewhat longer to Cæsarean, Rhythm, Nævus, Frambœsia, Amœba and Pharmacopœia.

[1] In medical words there is generally no true etymology. They did not grow out of the Greek, but the Greek words were seized upon to serve as symbols and aids in forming new words, as it were with malice prepense, and often with a laughable ignorance of or indifference to the roots and laws of word-formation. Moreover, in these days of printing and detailed history, etymology is not so stern a schoolmistress as in former times.

THE ADDRESS IN MEDICINE BEFORE THE BRITISH MEDICAL ASSOCIATION.

Lauder Brunton is one of those rare men in medicine whose writings are valuable not only for the information imparted, but even more for the stimulus given to the reader's thought. A careful investigator and an independent thinker, he throws out, apparently at random, now and again, hints that, followed up, may lead to important advances in theory and practice. Thus, his speculations as to the relations of wave-interference with the chemico-vital processes concerned in the action of toxic and therapeutic agents contain, beyond question, profound truths. In his address at the recent meeting of the British Medical Association at Bournemouth, an abstract of which appeared in The Medical News for August 8th, and which is published in full in the *British Medical Journal* for August 1, 1891, Dr. Brunton has advanced, without undue insistence, a plausible explanation of a portion of the beneficial influence of blisters. This theory deserves more than passing mention, for it involves much more than its immediate context implies. Referring to the observation of Hankin that a mouse that, after being inoculated with anthrax, has a few drops of rat's serum injected into it becomes as resistant to the poison as is the rat, Brunton suggests that the application of blisters may be "a form of endermic administration of proteid matters, derived in part from the blood, but altered in their passage from the vessels to the surface of the skin, and thus having an effect on the body entirely different from what they would have had if they remained in their ordinary place."

Magnant (*Bull. Gén. de Thérap.*, May 15, 1891) has perhaps anticipated Brunton in this idea, for he treated tuberculous and other patients (varicose ulcer, diabetic ulcer, enlarged cervical gland) with injections of the serum obtained by blistering healthy persons. But the hint is worth serious investigation. We know comparatively much of bacteria, comparatively little of the physical, chemic, vital conditions of the invaded organism, which render the invasion of bacteria harmless or harmful, as may be. The thought is suggested that we may learn so to modify the vital processes as to produce and maintain in all persons the immunity undoubtedly possessed by some. Whether or not Brunton's speculation as to blisters be well founded, the greater research it implies might well be undertaken, and by none so well as the great teacher of pharmacology himself.

Dr. Brunton is right beyond question when he says that those who used bleeding in former times "were not fools." Their theory was that by depleting the circulation they could mechanically overcome stasis, lessen the heart's labor, and remove from the system "unhealthy humors." The Bournemouth lecturer says: "Experiments upon animals have shown that withdrawal of blood from the veins causes absorption of proteid matters from the tissues and these may have an action of their own upon the blood and tissues generally with which they are thus brought into contact. Indeed, it is possible that the benefits of free purgation may be partly due to a similar action." This language may a hundred years (or less) hence seem as barbarous as that of past centuries does to some of the ultra-scientific sciolists of to-day. But the important fact remains that, explained or unexplained, or but partially explained, useful measures like blistering and bleeding are not to be consigned to the limbo of delusions, because fashion and unthought abused them in the past, or because unthought sets the fashion of decrying them in the present.

A significant feature in the retrospect of "Twenty-five Years of Medical Progress," as portrayed by Dr. Brunton, is the great influence of what he terms "Darwinism" upon medicine. The new biology has made itself felt in anatomy and physiology, but less than it should have done, we fear, in pathology and therapeutics.

We confess, however, to as much surprise at reading the name of Darwin where that of Spencer should have been, as the lecturer's friend experienced in 1866 at finding him ignorant of the existence of *The Origin of Species*. Great indeed was the work, merit, and influence of Darwin—and part of Dr. Brunton's tribute to that noble character is appropriately paid; but the "doctrine of evolution" in its modern form and its application for good or for ill to the study of "the evolution of the elements, of the planetary systems, of living beings, of communities, of customs, of laws, of literature, science and art," are Spencer's. Darwin cultivated—wondrously well—but a limited portion of the vast field of thought rediscovered and largely prepared for the philosophic husbandmen of all time by Spencer. But the finished character of Darwin's work when he brought it to public atten-

tion, and his fearless extension to man of the principles applied to other animals, have largely identified his name in popular parlance with the broader principles laid down by SPENCER.

If medical men would read, more than they do, the works of these two great thinkers; if they would emulate the painstaking, accurate observation of the one, and strive to attain the comprehensive view of relations between facts exhibited by the other; they would not only be better physicians, but they would also more nearly resemble their predecessors, by whom, in a time of widespread ignorance and superstition, the learning of Nature was sacredly treasured, and the love of knowledge preserved from extinction.

PERVERTED CHARITY.

PHILADELPHIA may well be proud of her numerous charities, in the work of which her hospitals take no small part, but it must be a peculiar charity that dismisses from its care patients in the case of whom there can unfortunately be no hope of recovery. That patients suffering with chronic, incurable diseases should be excluded from institutions maintained by private resources might not be ground for criticism, but it does seem criminal that, from one motive or another, patients should be sent out of hospitals in the case of whom, once admitted, the improbability of recovery should become manifest. It is a legitimate and laudable ambition on the part of any hospital to reduce its mortality-rate to the lowest degree, but, apart from all material considerations, the dismissal of dying patients, with this end in view, cannot be too strongly condemned. A purer, sweeter, nobler charity cannot be conceived than the care of the hopelessly ill.

The sketch that we have made is not taken from an hypothetical case, but from a living picture, in colors that cannot be too vividly reproduced. Nor is the instance an isolated one. It can be no secret that cases hopelessly chronic are transferred from general hospitals to the city hospital.

The hospital is a much-abused institution. To its credit be it said, however, that if it err it is usually on the side of safety, so that whenever doubt arises it inures to the benefit of the patient; but for some reason that does not admit of ready explanation there occasionally transpires such an occurrence as is here recorded. It were far better that a hundred doubtful cases be admitted to the hospital than that by dismissal a single life be hurried out of existence.

REVIEWS.

EINFÜHRUNG IN DAS STUDIUM DER BAKTERIOLOGIE, MIT BESONDERER BERÜCKSICHTIGUNG DER MIKROSKOPISCHEN TECHNIK. FÜR AERZTE UND STUDIRENDE. Bearbeitet von DR. MED. CARL GÜNTHER, in Berlin. Zweite, vermehrte und verbesserte Auflage. Mit 72 fast sämmtlich nach eigenen Präparaten vom Verfasser hergestellten Photogrammen. Leipzig: Georg Thieme, 1891.

INTRODUCTION TO THE STUDY OF BACTERIOLOGY, WITH ESPECIAL REFERENCE TO MICROSCOPICAL TECHNIQUE. FOR PHYSICIANS AND STUDENTS. By CARL GÜNTHER, M.D., of Berlin. Second, enlarged and improved edition. With 72 photo-micrographs prepared almost exclusively from personal specimens.

BOOKS on the technique of microscopy and upon bacteriology have multiplied within the last half-dozen years until their number is legion. The department of clinical medicine represented by microscopical investigation received a powerful impetus with the birth of the science of bacteriology. Who can compare the optical instruments of to-day with those of ten years ago and not be moved with admiration at the wonderful advances that have been made? Then it would have been thought chimerical to have proposed a microscope that by the mere substitution of an ocular, could furnish with the same readiness and clearness of definition a magnification of fifteen hundred diameters and one of a hundred; that these enlargements could be reproduced and permanently recorded for illustration; and further, that by means of special apparatus magnifications of thirty or forty thousand or more could be projected upon a screen for demonstration.

The first edition of Günther's *Bacteriology* was exhausted in eight months. This, the second, in a terse and agreeable manner records the essentials of a study introductory to the subject of bacteriology, calculated to be useful alike to the student and to the general practitioner who does not contemplate more than a general acquaintance with the subject, adapted to his purposes as a clinician.

What a tribute to the father of modern bacteriology that scarcely a page but contains the name of the immortal Koch or of his pupils. Due credit, however, is not withheld from his distinguished confrères, Pasteur, Flügge, Hueppe, Löffler and others, as well as to Leuwenhoek, Cohn, de Bary and others.

Speaking of cover-glass preparations, Günther says that these may be disinfected, prior to staining, by preservation for a variable period in a solution of sublimate (sublimate 1, hydrochloric acid 5, water 1000), in which they may remain for an hour without diminution of staining affinity. In a note he adds that although the anilin-stains have decided anti-bacterial activity, all bacteria are not destroyed by saturation with the stain.

The method of staining tubercle bacilli in cover-glass preparations that he uses by preference, consists in staining in the usual way with anilin-oil fuchsin and decolorizing with a 3 per cent. solution of hydrochloric acid in alcohol; then after staining with methylene-blue and drying he passes the preparation three times through the

flame of a Bunsen burner. By this last procedure he fixes the stain permanently. We should fear lest other than tubercle bacilli remain stained or all be decolorized. Günther makes the point that *pure* alcoholic solutions of basic anilin stains are incapable of staining, and that *absolute* alcohol will not decolorize bacteria as well as animal tissues.

In the study of stained preparations he insists upon what he terms "maximum illumination," *i. e.*, the adjustment of the mirror (always plane), and of the condenser so that the apex of the cone of reflected light corresponds to the centre of the field at the plane of the preparation.

At the end of the work are seventy-two on the whole excellent photograms of the more common varieties of microörganisms.

The typography and execution of the book are excellent.

ELECTRICITY: ITS APPLICATION IN MEDICINE. By WELLINGTON ADAMS, M.D. Vol. I., pp. 105. Detroit: George S. Davis, 1891.

SHOULD the second part of Dr. Adams's admirable little book be as original, comprehensive, and practical as this, the first volume, it will when completed out-rank any of its size on a similar topic that has appeared. There seems no reason to doubt that Dr. Adams will disappoint us. He is practically conversant with general electrical science, and is, moreover, an original thinker and experimenter. His authoritative style—a striking feature of the book—may well be pardoned, in view of his evident grasp of the physical side of the subject, which he handles in a manner to excite admiration. We feel bound to express mild surprise that he should class the Barrett milli-ammeter—an instrument that, like the Barrett silver-chloride galvanic and faradic battery, though handsome in appearance, has proved in our hands utterly untrustworthy—second to his modification of the excellent Weston ammeter. It is the more curious, since he rightly characterizes the Barrett milli-ammeter as neither accurate nor reliable. The Weston, we understand, is quite as he describes it: "The first absolutely correct, direct-reading *dead-beat* milli-ammeter that has ever been placed upon the market." Dr. Adams is evidently unacquainted with Flemming's instrument, which takes high rank for reliability and accuracy. Though not technically "dead-beat," it is sufficiently so for practical purposes, and is in every way incomparably superior to the meter of Barrett.

VACATION TIME, WITH HINTS OF SUMMER LIVING. By H. S. DRAYTON, M.D. "The Science and Health Library." New York: Fowler & Wells Co., 1891.

IN a brochure of eighty-four pages, Dr. Drayton has succeeded in presenting in popular form a number of practical suggestions as to the best means of spending the summer season most advantageously.

Dr. Klaussner has been selected as the successor of Dr. Angerer as Professor Extraordinary of Surgery and as chief of the Surgical Polyclinic at the University of Munich.

CORRESPONDENCE.

BERLIN.

Latin Inscriptions — Obstetrical Cases — Gynecological Operations — Martin — Gusserow — Olshausen — Facilities for Instruction — Incentives for Work — Rupture of the Uterus — Axis-traction vs. Podalic Version — Lysol — Obstetrical Abandonment of Corrosive Sublimate — Details of an Abdominal Operation — Operation for Ectopic Gestation — Ungrateful Criticism — Martin's Clinic — His Dexterity.

ON the wall of a large building near that in which I am staying, there is a great sun-dial, having above it the inscription in large letters: *Horas non numero nisi serenas.* By the way, one very much more unexpectedly and frequently meets with Latin inscriptions in Europe than in the United States For example, one may read upon the door of an old stable in Reichenhall this probably very appropriate legend: *Cave canem.*

The seventeen days that I have spent in Berlin may be recorded as very bright days, so far as seeing some important cases in obstetrics and witnessing many gynecological operations are concerned. The latter include twenty-three laparotomies, in two of which the uterus was removed on account of myoma, two vaginal extirpations of the cancerous uterus, one operation each for vesico-vaginal fistula and for elephantiasis of the labia majora, and some sixty colporrhaphies, and operations upon the cervix and upon the perineum. The operators were Dr. Martin and Professors Olshausen and Gusserow.

Drs. Olshausen and Gusserow are professors in the University, and each has under his control for obstetric and gynecological cases, the former at the Charité and the latter at the Frauen Klinik, not less than one hundred and thirty beds; moreover, there is an external obstetrical service belonging to each, but under the immediate direction of their respective assistants. In all, more than four thousand cases of labor are available for the instruction of the medical students of the University of Berlin. Students may select the course of Gusserow or of Olshausen, and the division is about equal—each of these teachers has somewhat more than two hundred students. Professor Olshausen came here from Halle as the successor of the lamented Schröder, and being in charge of the Frauen Klinik (the buildings and appointments of which are recent and admirable, and include a residence) holds probably the most desirable public position in obstetrics and diseases of women in Germany. When I contrast the facilities for instruction here, the ample clinical material, the imperial position of teachers—no interference from ignorance, malevolence or covetousness—the great opportunity for work, and the incentive to the best work, with the condition of things in many American medical institutions, it brings a sorrow too great for words. My belief is that much greater facilities for clinical instruction, especially in obstetrics and gynecology, ought to be supplied in our great centers of medical teaching. To this end, both State and city appropriation of money ought to be made, first to those hospitals in which such instruction is given, and especially to the hospitals connected with medical schools; private institutions should be sustained by

private beneficence, or by their projectors, who established them mainly or solely for their personal advantage.

But to return: Professor Olshausen showed me two cases of rupture of the uterus, the accident in both women occurring outside of the hospital. In one case the cause was hydrocephalus in the fetus; and in the other, attempted version on account of a narrowed pelvis; delivery was effected after puncture and after craniotomy, neither patient being treated by abdominal section. One of the women was almost entirely well, and the other, and more recent case, promised prompt convalescence. These cases show the error of those who insist upon laparotomy as the rule in rupture of the uterus, berating obstetric writers for not accepting this dogma, and charging them with want of progress. It is to be regretted that there is so much dogmatism in medicine, so much disposition on the part of some in the profession to assert that "this, and this only, is the right way," and to disparage the ability, the work and the reputation of another. Individual professional experience is necessarily very limited—limited in extent and in duration—and absolute conclusions drawn from it are, therefore, liable to be erroneous. I am sorry for the physician who, as his years go on, does not grow more catholic in his opinions and become more charitable in his feelings, toward those of his own guild especially.

The axis-traction forceps is scarcely used by Berlin obstetricians, they asserting that podalic version is better suited in those cases for which the various forms of this instrument have been advised.

Lysol is being quite largely tried as an obstetric antiseptic, and Dr. Gusserow tells me that his assistants have found it satisfactory, though he has not used it himself. He further states that he has abandoned corrosive sublimate, because three of his patients perished from mercurial poisoning, an equal number dying from septic disease. The general obstetric mortality of the Charité is about one per cent., or a little less; this percentage is materially increased by women already sick being brought into the hospital.

A laparotomy (for cystoma of each ovary) was the last operation I witnessed in London before coming to Berlin; it was done at the Samaritan by Mr. Bantock, who declares microbes to be nothing but "bogies," and, of course, no antiseptics were used; but a greatly different faith and practice prevail in this city! You recognize this first when you go to one of Professor Olshausen's laparotomies, clad in a sleeveless white jacket, your own coat having been taken off; or to one of Dr. Martin's: having laid aside coat and vest, and passing through a cloud of carbolic acid spray in a hall at the entrance to the operating-room (a room used exclusively for abdominal section: an apparatus for sterilizing, by dry heat, the instruments employed is a part of the furniture of the room; possibly there is a second or third, in which the dressings are sterilized), you enter Dr. Martin's room, and it looks as if there had been a mist-like rain that had fallen upon the stone floor, and upon all the scanty furniture—everything is wet, even the walls seem afflicted with hydrorrhea. Walls and floor have been washed with a solution of sodium bicarbonate, and a powerful spray-apparatus has been diffusing carbolic acid through the rooms for hours the day before the operation. Operators and their assistants wear the linen gown, robe, shirt—whatever it is called—advised by Von Bergmann, and at the Charité I have also observed one or two of the nurses wearing a linen garment. The operator and his assistants are, of course, scrupulous in the use of hot water, soap, and brush—but Tait, Bantock, and Price, and a score of others I might name, are just as careful and thorough in the use of these means; then follows washing the hands in a corrosive sublimate solution.

The patient has the bowels and bladder emptied, has a bath, the pudendum is shaved, and she is taken to an adjacent room, where the anesthetic, always chloroform, is given; next the abdominal wall is washed with soap and hot water, scrubbed, indeed, until it blushes—if not from shame, at least from irritation; then follows a thorough washing with corrosive sublimate solution, after which the patient is carried into the operating-room —at Dr. Gusserow's clinic room she is brought in quite naked, so far as body clothing is concerned, with nothing but a sheet over her. Supposing Dr. Martin the operator, immediately after the patient is placed upon the table, the chief nurse, Frau Horn, makes a further cleansing of the abdomen, by rubbing it well with lemon-juice; then follows another washing with sublimate solution. I cannot forbear pausing for a moment to say a word about this remarkable woman. She has been in Dr. Martin's employ for eleven years, and she can anticipate the wants of the operator, almost apprehend his very thought, better than any assistant, male or female, I have ever seen; no matter what is needed at a particular moment —sponge, knife, needles, scissors, silk or catgut, forceps, what not, it is always at hand—she is alike quick in thought and in action. We have a popular expression for one who shows power and success of action: "He is a major;" I cannot call Frau Horn a major, but would rather select the superlative, and say she is an *optima;* no one who has seen her prompt and intelligent work at Dr. Martin's operations will doubt the justice of the name.

Those who have been accustomed to the short abdominal incision made by Mr. Tait, will be not a little astonished, at first, at least, at seeing the long incision so commonly made in Germany. The advantage of the latter is that the opportunity of seeing is so much greater —the operator has vision as well as touch. I think, too, that in making a long incision the discovery of the linea alba is more readily made; for I have certainly seen operators with considerable experience occasionally have delay and difficulty in finding this when making a short incision, while with the long one I have never seen Martin hesitate a second. Moreover, the sutures of the abdominal wound are more readily, possibly, too, more accurately placed if this be long than if it be short. Now, if one adds these incidental advantages to the primary one that has been mentioned, it must be admitted that much may be said in favor of the German method.

Two other points in which the work of the German operators whom I have seen differs from that of Mr. Tait and his followers: The abdomen was not washed out in a single instance, nor was a drainage-tube used, though the washing out seemed to me plainly indicated in one of Professor Gusserow's cases (a tubal gestation, with

rupture into the abdominal cavity, and considerable hemorrhage), and in two of Martin's cases (a rupture of a collection of pus during enucleation of the sacs, and some hemorrhage from tearing up adhesions). It occurred to me that not only washing out could have been wisely done, but also that a drainage-tube ought to have been employed. Yet all of these patients did well. Furthermore, in no case were silk ligatures used in the abdominal cavity—catgut always; even in a case of hysterectomy by Gusserow, and in one of complete removal of a large myomatous uterus by Martin, catgut was sufficient to secure perfect hemostasis; it should be remembered that these ligatures are used freely, three or four of them, for example, in tying the pedicle of an ovarian tumor.

From what I have seen of the work of other great operators, and from what I have seen here, I am more than ever convinced that there is more than one way to Rome—indeed, one might almost adopt a poet's line: "The ways they are many, the end it is one." The time for dogmatism has passed, and he who swears according to the method of this or that master may go widely astray, so far as justice is concerned; a true eclecticism is the wiser creed.

Among the very interesting operations performed by Professor Olshausen was one for ectopic gestation, in which the cyst had ruptured between the folds of the broad ligament, an extra-peritoneal hematocele had resulted, and suppuration had followed. Puncture of the hematocele through the vagina was first made at two points, and nothing but pure blood could be extracted by the aspirator; then an abdominal incision was made, not entering the peritoneal cavity, and a large quantity of sero-purulent and bloody fluid removed; drainage was accomplished by means of iodoform gauze. In this case the temperature, which had been elevated for some days, became normal, and when I saw her some days after the operation, her convalescence seemed assured.

It would be ungracious to make any criticism of these operations and of their methods, even if good occasion offered. He to whom the privilege of witnessing operations has been offered, would be deficient both in conscience and in courtesy did he in printed or uttered words condemn the operator who had kindly given the invitation. If the operation was wrong, he could be told so in private, and thus the endeavor be made to set him right, instead of the utterance of heedless and harsh words to others. But very often this professional critic has not the knowledge justifying his assumed rôle, and his speech may be far from silvern; it may be brazen; and his silence, above that of any other, would be golden. I know that Mr. Tait, for example, has had unjust charges made against him by men who have solicited, and have been granted, the opportunity of witnessing his operations, for I have heard them; even since I have been abroad this summer, an American physician made a statement in my presence as to Dr. Tait's want of cleanliness in abdominal operations, the former having recently seen Tait operate, that is so directly opposite to what I have myself seen that I discredit the assertion. But, even if it were true, the propriety of making it is doubtful, and beside, to receive a benefit and then attempt to injure the benefactor, does not exalt human nature.

While Professors Olshausen and Gusserow occupy important public positions, Dr. Martin has made his own position, has his own private hospital and dispensary, and gives instruction in obstetrics and diseases of women to graduates in medicine as a privat-docent. There is a daily attendance at the dispensary of from thirty to sixty patients, and the hospital, which has forty beds, always seems to be full. Probably the majority of his patients pay for their hospital accommodations, yet frequently some of them can pay but little, possibly some others nothing. His benevolence certainly must be greatly taxed. Of his ability as an operator it is not necessary to speak. He has a corps of able assistants, the first of whom is Dr. Mackenroth, who is associated with Martin in teaching, and to whom I am indebted for important acts of kindness. Though Dr. Martin is one of the most rapid of operators, he dictates to an assistant, who has tablet and pencil ready, brief statements of conditions revealed in the course of the operation. The following record made by one of his assistants tells the story of the rapidity of operating better than any general statement can:

(July 18, 1891.)

1. Frl. B., 22 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. Punctio ovari. dextr. 6 min.
2. Frau K., 24 years old. Tumor tubo-ovar. dexter. Ovario-salp. dextr. 8 min.
3. Frau K., 30 years old. Tumor tubo-ovar. dexter. Salpingotom. dextr. 7 min.
4. Frl. B., 27 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. Resectio ovar. dextr. 10 min.
5. Frau W., 26 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. 6 min.
6. Frau S., 41 years old. Tumor tubo-ovar. dupl. Ovario-salp. dupl. 15 min.

All of these operations were accomplished and the patients were returned to their beds within two hours. Velpeau said that he credited the *vagitus uterinus* because reputable observers asserted that they had heard it, but if he heard it himself he would not believe it. So I would hardly trust my own observation as to the rapidity with which the work was accomplished—would be disposed to discredit my eyes and my watch—but I cannot doubt the statements of other observers.

I saw these patients on the fifth day subsequently, and they were all doing well. One might think that after such tax upon brain, and conscience, and hand, the operator would be very weary, and be imperatively in need of rest. But no; for Dr. Martin, after laying aside his operating attire—white flannel shirt and pantaloons and rubber apron—and resuming his usual attire, save a coat, immediately performed three plastic operations—vaginal, perineal, and uterine. A distinguished British statesman said of Daniel Webster that he was a steam-engine in breeches; and I think a similar statement might be made as to Martin.

I must not omit to mention that during the introduction of the suture for closing the abdominal wound Dr. Martin has a large flat sponge, which has been well covered with pure sweet oil, placed upon the omentum and intestines; he states that since following this plan subsequent adhesions to the abdominal wall do not occur.

The operating-rooms are small, especially that devoted to laparotomy, and, of course, the number who can witness an operation satisfactorily must be small. Those

who are fortunate enough to be invited represent many countries, and not Germany alone; I have at different times seen several from the United States, among them two prominent homeopathic practitioners from Boston, and one from Chicago, an Italian, Russians, Danes, Norwegians, and others, some of them men of great celebrity. There is danger of Martin being overrun by visitors. Indeed he tells me that he is frequently annoyed by persons whom he does not know. Possibly he may one day be compelled to institute a quarantine against visiting operators almost as strict as that which Mr. Tait is said to enforce.

Professor Olshausen usually operates at 7.30, sometimes at 7 A.M., Professor Gusserow at 8.30, and Dr. Martin at 12.

NEWS ITEMS.

Obituary.—The death is announced of DR. RICHARD LEA MACDONNELL, of Montreal, Professor of Clinical Medicine at McGill University, and Assistant Physician to the Grand Trunk Railway Company. He was the son of an eminent Irish surgeon of the same name, one of the pioneers of medical education in Canada.

Dr. MacDonnell succumbed to phthisis, at the age of thirty-eight. For his years, he had done a great deal of medical literary work. He is familiar to the readers of THE MEDICAL NEWS through valuable articles from his pen on syphilis, typhoid fever, cirrhosis, etc., that have appeared in our columns. He had taken his B.A. at McGill before he began his medical course. He had a well-stored mind, a pleasing manner, and a fine presence. His enthusiasm for scientific medicine continued to the last—at the time of his death he was engaged on an article on fevers for Pepper's forthcoming work. He leaves a widow, but no issue.

At a special meeting of the Montreal Medico-Chirurgical Society the following resolutions were unanimously adopted:

Resolved, That this society records, with the deepest regret, its sense of the loss which it has sustained in the death of Dr. Richard Lea MacDonnell, one of its most able and efficient members, who not only took part in its debates, but by valuable papers contributed from time to time, added not a little to the progress of medical science.

Resolved, That in the opinion of this Society Dr. MacDonnell's death, at a time when his usefulness was greatest, is a loss to the medical profession of Canada, in which he took a high place as a teacher and writer and earnest scientific investigator.

——— DR. THOMAS ANDERSON RODGER, a leading surgeon of Montreal, and Chief Medical Officer of the Grand Trunk Railway, died of septic pneumonia, August 6th, at the age of forty-four years. He had had large surgical experience in railway work, and was a man of most genial disposition. He began life as a pharmacist. He leaves a widow and one son.

By a curious coincidence, within a few days the great railway corporation loses its two principal medical officers.

An Army Medical Board will be in session in New York City, N. Y., during October, 1891, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15, 1891, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. SUTHERLAND,
Surgeon-General, U. S. Army.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 11 TO AUGUST 17, 1891.

BAILY, JOSEPH C., *Lieutenant-Colonel and Assistant Medical Purveyor.*—Granted one month's ordinary leave, in extension of sick-leave.

GRADY, CHARLES M., *Assistant Surgeon.*—Will, upon the final adjournment of the Army Medical Board, resume his leave of absence.

COCHRAN, JOHN J., *Assistant Surgeon.*—Died at St. Luke's Hospital, New York City, N. Y., August 5, 1891.

DE WITT, THEODORE F., *Assistant Surgeon.*—Granted sick-leave of absence for thirty days.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 15, 1891.

BAKER, J., *Passed Assistant Surgeon.*—Detached from U. S. S. "Palos," and authorized to delay reporting in the United States for six months.

SAYRE, J. S., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Ranger," and ordered to the U. S. S. "Palos."

MEANS, V. C. B., *Passed Assistant Surgeon.*—Ordered to the New York Naval Hospital, September 1st.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING AUGUST 8, 1891.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of Board of Examiners, August 8, 1891.

SAWTELLE, H. W., *Surgeon.*—To proceed to Portland, Me., for special duty, August 3, 1891.

GODFREY, JOHN, *Surgeon.*—To represent the Service at the Seventh International Congress of Hygiene and Demography, July 25, 1891. Detailed as a member of Board of Examiners, August 8, 1891.

IRWIN, FAIRFAX, *Surgeon.*—Detailed as Recorder of Board of Examiners, August 8, 1891.

MEAD, F. W., *Surgeon.*—Granted leave of absence for thirty days, July 30, 1891.

CARTER, H. R., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, August 8, 1891.

CARMICHAEL, D. A., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, August 3, 1891.

PETTUS, W. J., *Passed Assistant Surgeon.*—To proceed to Wilmington, N. C., for temporary duty, July 31, 1891.

PERRY, J. C., *Assistant Surgeon.*—Granted leave of absence for twenty-seven days, July 28, 1891.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

PREMATURE DIAGNOSIS AND PREMATURE TREATMENT OF SYPHILIS.

BY H. C. DEMBITZ, M.D.,
LECTURER ON SKIN DISEASES, ETC., AT THE HOSPITAL OF THE COLLEGE OF MEDICINE, LOUISVILLE, KY.

IN cases of obscure nervous troubles, in which by any possibility the disease may be due to syphilis, it is customary, as the saying is, to give the patient the benefit of the doubt, and put him on mercury and the iodides. In cases in which there are symptoms evidently caused by pressure on the brain or cord, or by tumors in other viscera, specific treatment is resorted to, and this in spite of the absence of any history of syphilis, in spite of strenuous denial, and without any definite lesions being found. This may not be strictly scientific, but it is eminently proper. In such cases we are often in doubt whether we have to deal with a malignant neoplasm or with a gumma, or perhaps a specific meningitis. In the former case we have little to hope for from treatment; in the latter case there is often prospect of much improvement, if not of cure. We hope for the patient's sake that syphilis is at the bottom of the trouble. But every gumma is likely to leave some injurious cicatrix behind, and the process may be quite rapid. There is, therefore, an urgent call for treatment while we may make a diagnosis. If positive, we have but to continue the treatment begun; otherwise we have done no harm, and have but postponed a very unfavorable, probably fatal, prognosis. We begin treatment because there is immediate danger. We are helped to a definite diagnosis, and we can do no harm.

How differently we are placed in many cases of suspicious sores, in which a diagnosis of hard chancre is made, and treatment begun before the appearance of the exanthem, or even of the indolent buboes. There is no occasion for haste, and so long as there remains the least doubt treatment certainly should not be begun. The case is exactly the reverse of the one just considered. There is no immediate danger. We prevent absolute certainty in diagnosis; if mistaken, we leave a cloud hanging over our patient for life, and even if correct we lose the measure of the effect of treatment, and, as experience proves, do not moderate the future course of the disease.

It has become customary to speak of hard and soft chancres, and the general use of these terms, the former to designate the sore that is to be followed by constitutional symptoms, the latter for the local non-infecting sore, is the cause of the numerous premature diagnoses, both positive and negative, which it is generally acknowledged are so often made. A typical chancre, it is true, is hard—has a peculiar, sharply limited induration, which, as is well known, is due to an infiltration of cells about the minute bloodvessels. A chancre is, therefore, most typical in situations in which there is an abundance of loose connective tissue, and the infiltration can become considerable without choking up the circulation and causing a breaking down of the chancre, and at the same time there is such a marked contrast between the loose tissue and the hard mass, that the latter can readily be picked up between the fingers.

A chancre of the prepuce, tonsil, scrotum or lips well shows this characteristic hardness; on the glans penis, cervix and other parts where the skin is firmly bound down and there is little connective tissue, the chancre soon ulcerates, and the hardness is rarely well marked.

On the other hand, a chancroid, when typical, is an acute inflammatory ulcer; there is an inflammatory infiltration, gradually shading off into the surrounding halo and the normal skin. Yet, in some subjects, the inflammation has little acuteness, and, while on the glans the chancre may resemble a chancroid, on the prepuce or scrotum the induration of the chancroid, especially if in any way treated by caustics, may approach that which is characteristic of a chancre.

When we recollect the *chancre mixte* of Rollet, we may be much puzzled to say whether our soft sore which has been touched with nitrate of silver, and has become hard, is so as the result of treatment or of double infection. For, if the patient have received both poisons, he would of course develop a soft chancre first, and, after the period of incubation, the syphilitic virus would cause its infiltration and hardness.

There are, of course, cases in which a diagnosis of chancre can be made at the first glance, but I do not think it amiss to have recalled and reviewed some of the points that so often make a diagnosis very difficult, not to say impossible. It is certainly a commentary on the uncertainty of diagnosis from the sore alone, that such an authority as Kaposi

still finds ground to adhere to the theory of unicity.

As for the history of each case, this is, except among the most intelligent class, entirely unreliable. A sore on the penis seems to have a potent occult influence on either man's truthfulness or his memory. It is difficult to say why, for the story he tells does not always put him in a better light than the truth would. The patient's statements as to time of infection are not trustworthy, owing often to multiplied opportunities and the strange psychological fact mentioned. The consecutive or contemporaneous appearance of multiple sores is of course an important point in diagnosis, presumptive evidence in the former case of chancroid, in the latter of chancre. But I have seen cases in which several chancroids developed simultaneously, and careful treatment prevented the formation of others; while, on the other hand, chancres contemporaneous in the sense of being the result of one infection, may by the patient be observed at times several days apart, one being larger, more painful, or in a more prominent place.

It is true that by waiting for an induration of the inguinal glands much light may be gained in a week or two. Enlarged, hard glands, painless and movable, developing at both sides of the groin, above Poupart's ligament, make a diagnosis of suspicion positive. But this enlargement may be on one side, may be slight, and, not developing under the physician's observation, the significance of a slight induration of the glands of one side often leaves him in doubt.

I hold that a diagnosis of chancroid only should also be guarded. The fact of the chancroid is evidence that an erosion was present, and this same erosion may have admitted the syphilitic virus as well. I have now a case under treatment in which multiple chancroids were present for four weeks before induration set in. This was after lightly touching with nitrate of silver. Diagnosis was reserved until a week later, when both groups of inguinal glands became indurated, were freely movable and but slightly tender. At the risk of appearing to hedge, it is my custom to say: "This, so far, is a soft chancre; if no special change occurs in the sore in the next few weeks, there will be no constitutional disease." The physician can then explain that the two poisons are entirely distinct, and that, if the patient was not unfortunate enough to have picked out a companion who had both diseases, he cannot acquire both. Most patients consider this chance small, and do not worry much about it. Still, if the event transpire they will not blame their physician. This is much more satisfactory than the uncertainty of the unicists.

Can the fact be denied that many cases cannot, from the primary lesion, be diagnosticated with certainty? Are there good reasons in the majority of cases for making an immediate diagnosis? Is the patient's condition and the future course of the disease bettered by specific treatment inaugurated at once? Does he incur any new danger by awaiting the exanthem, or at least the indolent buboes? All these questions may, I think, be answered in the negative. It has often been remarked that the syphilis following chancres of the face and hands runs a more severe course than usual. This, by competent authority, has been attributed to the fact that these chancres, owing to the disfiguring effects to which they give rise, or to special danger of infection, are prematurely subjected to treatment, both local and general. This early treatment often aborts the first eruptive stage altogether, and we lose all measure of the effect of the mercurial course. But the later skin eruptions are not prevented; they tend rather to be numerous, and are deeper, with a greater tendency to suppurate. It seems to me that the first eruptions may act in the nature of a vaccination, changing the soil, so that the later syphilides are modified. When the first eruption, then, is aborted we can understand why the later one should be more severe.

Whether this be the reason or not, I believe it is rather a disadvantage than a benefit to begin general treatment at once, and therefore, even when the diagnosis of chancre is positive, I confine myself to local treatment, unless there are special and urgent reasons for pushing inunctions or internal medication. In cases in which the chancre is mild I even do without mercury in any form locally.

Believing thus, I can see no occasion for hasty diagnosis of syphilis, and still less for immediate general treatment, which prevents a rectification of a mistaken diagnosis.

"Syphilis is the best sickness—that is what I always tell you," is what Professor Kaposi, in Vienna, used to say to us when he exhibited a patient after a few weeks' treatment, showing a wonderful improvement in an apparently serious case. "Gonorrhea kills more people than syphilis," was another dictum. Syphilis is certainly insidious and deadly in some of its forms, but the public, while taught care in prevention, and due attention to a case already acquired, as well as conscientious consideration of others, should not be frightened by exaggerated accounts of the ravages of this disease. Subjects who have had, and often those who have symptoms at the time, may beget healthy children, though it is true that the greatest mortality from syphilis is *in utero*. If patients' fears were somewhat calmed they would be more willing to await developments, and the fear of a patient running off to another physician would not necessitate prompt treatment against one's better judgment.

Even when a chancre is correctly diagnosticated, general specific treatment is not in order. It has been said that mercury is to constitutional syphilis what iron is to anemia—a tonic *par excellence*. This is true when the disease is generalized, not when it is local. Here the condition for which it is so wholesome is not yet present. Mercury is a poison, and the patient is so weakened and depressed by its premature use that he is less able to bear it when it is needed. Constitutional syphilis antagonizes the mercury; the local lesion does not decrease the susceptibility. The patient, in fact, enters upon the constitutional period of the disease in an enfeebled condition.

If the diagnosis of chancre be mistaken, the mercurials are injurious, and at the same time they forever mask the diagnosis, and the patient can never feel safe. A cloud hangs over him; he fears to marry; he imagines every pimple and every ache some new manifestation of a disease he never had; he is in fact often more miserable than the man who has had his early symptoms, and has been reassured by seeing the prompt effect of proper treatment.

Another point worthy of consideration at this time is the bearing of this diagnosis on life insurance, because some companies will not take risks until after a certain number of years, and some reject altogether those who have had syphilis.

How much better then to reserve a diagnosis until it can be made with certainty. Calm the patient's anxiety and, perhaps, exaggerated fears; put him on a tonic treatment if he needs it, which will aid in the cure of the chancroid, if such it be. If a constitutional disease be about to follow, this plan will put the patient in the best possible condition to bear the disease and its treatment. It may require the aid of the dentist to put the mouth in good condition. Two or three cases may well be presented to illustrate some of the points made:

Case I.—A man, unmarried, aged twenty-two, complains of painful swelling in the groin. He says he had a chancre four or five months ago; was treated for syphilis, and sent to Hot Springs. He describes rather vaguely several sores he had on his penis. The swelling he now has in his groin is not a gland, but merely a subcutaneous abscess. There are no indurated glands in the groin or elsewhere; there is no induration or cicatrix left to indicate a chancre, and no pigmentation or other evidence of a cutaneous eruption. There is some acne, which by a vivid imagination was probably converted into a syphilitic eruption.

Just as this abscess was attributed to syphilis, any of the ills his flesh may be heir to in years to come will be attributed to that doubtful chancre, and he will again plead to be dosed with mercury and iodide.

Case II.—A man, twenty-eight years of age, was examined for life insurance by a friend of mine. The physical examination was entirely satisfactory, but the patient says he had syphilis, for which he was treated four years ago. He is now married, and has two healthy children. He never had an eruption. The doctor gives the patient's account, expressing his own doubt as to the diagnosis. The application was rejected.

An old diagnosis of syphilis is like a heart-murmur. We no longer regard a heart-murmur as proof of organic disease. Still the companies prefer to keep on the safe side.

Case III.—A patient, twenty-one years of age; has a sore on his penis, diagnosticated as chancre. There is some swelling in the right groin. Treatment begun for syphilis. No general eruption occurring, the patient becomes reckless in his excursions; he has no fears of infection, and inside of one year he has acquired a veritable hard chancre.

This case hardly requires further comment. My conclusions may be very briefly summarized:

1st. Never make a diagnosis of primary syphilis until it can be made with certainty.

2d. Never treat a case until the diagnosis is absolutely certain; and then, unless there be a very special necessity, do not begin a general mercurial course until there are signs of the disease being systemic.

In men the exanthems are very rarely missed. In women, it is true, the eruption may be very slight and be overlooked. But mucous patches about the genitals and about the mouth will almost always be found; and as women in this country seldom smoke, these patches, when following a suspicious sore, will suffice for a positive diagnosis. They, as well as the eruption on the skin, constitute an indication for general treatment.

THREE CASES OF CEREBRAL APOPLEXY, ONE CASE OF PROGRESSIVE COMA, AND ONE CASE OF RHEUMATIC MENINGITIS, FOLLOWING THE GRIP.[1]

By D. W. PRENTISS, M.D.,
of Washington, D. C.

The complications and consequences of the late epidemic, called the "grip," are so varied and so far-reaching, as well as of such a serious character, that I have thought a report of the following cases would be of interest and add something to the history of that remarkable disease.

Case I. *Grip, asthma, bronchitis, apoplexy.*—Mr. B., aged fifty-seven years, has had good health, excepting asthma, from which he has suffered for many

[1] Read before the Medical Society of the District of Columbia.

years. He gives no history of apoplexy in family. He has had repeated attacks of bronchitis complicating the asthma during the past ten years. On April 1st he was taken with chill, fever, severe headache, and pains in the back and limbs. Following this there was congestion of the lungs and bronchitis. The condition was very distressing on account of the asthma. For ten days his temperature ranged from 100° to 103°, the pulse from 76 to 96. He was greatly troubled by hemorrhoids. By April 15th he had greatly improved, and appeared to be getting well, but at this date he suddenly became paralyzed, both as to motion and sensation, on the right side, in the leg, arm and face. The paralysis came on without any apparent cause. The muscles about the eye were not paralyzed. Three or four days before, he had complained of not feeling right in his head, that he could not think properly, etc., but it was supposed to be due to the opiates taken to relieve pain and produce sleep. The intellect was greatly impaired. When spoken to, he recognized persons for the moment, but soon lapsed into a condition of apathy. Speech was almost abolished by the probable involvement of the speech-center, and by the paralysis of tongue and pharynx. This condition continued with but little change until May 3d, when he died. The immediate cause of death seemed to be a sudden increase of the effusion in the brain. Treatment consisted in purging by means of croton oil at the first, followed by laxatives to keep the bowels open; bromides were used to allay nervous excitability; ergot and nourishment were given systematically by stomach and rectum.

At first this was a clear case of "grip," with the usual symptoms of fever, headache, pains in the limbs and back of a severe character, sore-throat and cough. The bronchitis was that of the "grip," aggravated by the asthma. The cough was severe and occurred in paroxysms, and may have had something to do with the apoplexy. The urine was repeatedly examined and found normal. The suffering from the hemorrhoids seemed out of proportion to the local disease. The hemorrhoid that gave the pain was internal, and refused to be relieved by suppositories of opium and belladonna, or by cocaine locally, yielding only to hypodermatic injections of morphia. The paralysis was evidently due to cerebral hemorrhage on the left side, and, from the paralysis of the face being on the same side, was above the base of the brain. The apoplexy came on six weeks after the inception of the grip.

CASE II. *Grip, bronchitis, apoplexy.*—Mr. F., aged eighty-seven years; had apparently no predispotion to apoplexy, and was in good general health. He was a remarkably active and well-preserved man for his age, a clerk in a government office, and very seldom lost a day from his work. He was taken with the grip, April 13, 1891, accompanied by fever, headache, backache, leg-ache and cough.

He was given a fever mixture, and recovered very rapidly from his symptoms, so that I made but three visits, leaving at the last a "tonic of elixir of iron, quinine and strychnine." He was well enough to go down stairs to meals, and on April 26th he said he felt so well he would go to his office the next day. He ate his breakfast with an appetite, and then sat down to read the paper. After a while one of the members of the family spoke to him, and he did not answer. This being repeated, they went to him and found him unconscious. He was carried up-stairs, and when I saw him later in the day he was still unconscious, with stertorous breathing and complete paralysis of the right side of the body, including the face. He remained comatose until death, which occurred on May 15th. He had recovered from the grip, except the exhaustion, and the apoplexy came on two weeks later.

In this case, on account of the great age of the patient, it may be true that he would have had apoplexy if he had not had the grip, but taken in connection with other cases it is of interest.

CASE III.—Mrs. H., aged sixty-seven years; had enjoyed good general health, and had always been active. There was no known predisposition to brain trouble. She had had the "grip" a month previously to the present attack, but had not entirely recovered her strength. For several days previously to the paralysis the pulse was irregular, and there was a great deal of gas in the bowels, with griping and constipation. The morning of the attack there was dizziness and weakness of the limbs, with a feeling of exhaustion. This was May 5, 1891. She lay on the bed to rest, and at 3 o'clock P.M. on attempting to arise she found that she was unable to do so.

When I saw her some hours later I found partial paralysis of the entire right side, including the right side of the face. She could move the arm and leg, but with great difficulty. Speech was very much affected, so that it was difficult to understand her, and it tired her to try to talk.

From that date (May 5th) to this (May 27th) she has been under daily observation, without much change, except that she is now improved both as to motion of the limbs and in power of speech. At times the mind has been wandering. The treatment has consisted of calomel to move the bowels, bromide to allay nervousness, and suppositories of ergotin (0.6 each) three times a day. The calomel produced slight ptyalism and diarrhea. She is now improving in all her symptoms.

In this case, in the absence of other cause, and from experience with the previous cases, I have thought there might be an etiological relation with the prevailing epidemic. The difficulty of speech seemed to be due to two factors: 1. Aphasia from the effect of the brain lesion; and 2. The paralysis of the tongue and pharyngeal muscles.

CASE IV. *Progressive coma and death following the grip.*—Mrs. F., aged eighty years, was a well-preserved woman for her age, and, until the past three years, in fairly good health. During this

latter period she had been suffering from cerebral attacks, with slight paralyses, due apparently to congestion of the brain and effusion. These attacks were usually provoked by indigestion and constipation, and were relieved by purging and bromides. On March 22, 1891, Mrs. F. had sore-throat, fever, headache, and pains in the limbs. There was no tonsillitis. At first, and subsequently, bronchitis developed broncho-pneumonia. The cough caused great distress and loss of rest. This attack of broncho-pneumonia ran a course of ten days to resolution, but the patient, instead of rallying to recovery, fell into a stupor, from which at first she was easily roused, but day by day it gradually deepened into complete coma, and she died April 29, 1891.

In this case the coma seemed to be caused by gradual serous effusion into the brain, and was undoubtedly a direct result of the illness caused by the grip.

Case V. *Rheumatism and rheumatic meningitis following the grip.*—Miss G., about forty-five years of age, had enjoyed good general health. She had an attack of grip the latter part of March, from which she appeared to have recovered. On April 24, 1891, she was attacked with violent pains in all her joints, so that when moved or touched she screamed. There was no fever, no swelling, and no redness of the affected joints. On April 27th the temperature was 102.5°, and there was swelling, redness and pain in the finger-joints of both hands. On April 28th the fever was the same, with swelling of ankles and wrists. April 29th the thermometer registered 100.6°, and there was no relief from pain. She was at times delirious, with violent headache. From this time on the delirium increased, with retention of urine and constipation. Symptoms of meningitis were marked. On May 9th she was sent to Garfield Hospital, where she died three days later of meningitis.

I have reported these cases as following the "grip," and probably sustaining to that disease a causative relation. My reasons for this belief are:

1st. The sequence. In none of the cases was there any other apparent cause.

2d. The "grip" is a disease attended with well-marked symptoms pointing to derangement of the nerve-centers. This is shown by severe and characteristic pains which, during the acute stage, are its most pronounced symptoms, and also by the great nervous prostration that in so many cases follows. This has been universally observed, and has sometimes been extreme.

In one case, a lady forty-five years old, all her life exceptionally well and strong, had a moderately severe form of the disease, and apparently recovered. I had stopped visiting her, when a few days later she sent for me. I found her very much alarmed. She informed me that she knew she was going to die—that she could not walk across the room. I reassured her, prescribed tonics, and she ultimately recovered, but for several weeks she was not able to return to her duties as a department clerk.

One of the cases, that of rheumatic meningitis, deserves special mention. It seemed clearly due to the grip, and the symptoms, in the ordinary sense of the term, were not those of well-defined rheumatism. For several days the violent pains in the joints continued without any sign of inflammation, redness or swelling. When these did appear they were most marked in the finger-joints, hardly at all in the larger joints, although the pain continued. When the meningitis set in the joint-symptoms ceased. It seemed as if some morbid germ, or germ-product, were here at work.

A recent writer (Adenot, *New York Med. Record*, May 9, 1891) gives a list of pathological germs found in meningitis. These are the intercellular diplococcus of Weichselbaum; the pneumococcus of Fränkel; the pneumo-bacillus of Friedlander; streptococcus pyogenes; staphylococcus pyogenes; typhoid bacillus of Neumann and Schaeffer; and the pseudo typhoid bacillus of Roux.

I mention these in detail, because it seems that if so many different pathological germs are capable of causing meningitis, so also may the undiscovered germ of this epidemic malady. In Case IV., which I have called "progressive coma," there was no *apoplexy*, but evidently a gradual effusion, probably of serum, that first produced sopor, then stupor, and finally complete coma, which continued until death. All this followed immediately upon the grip. In this case also there had been previous disease of the brain.

As to the location of hemorrhage in the cases of apoplexy, it was on the left side in all three cases, and in the cerebrum or central ganglia. This was shown by the right-sided paralysis, and by the paralysis of the face being upon the same side. I have said little of treatment, because the treatment of "grip" is not under consideration, and because in the treatment of the apoplexy there was nothing out of the usual course.

There were no autopsies.

DEFECTS OF THE OCULAR MUSCLES.

By JOHN S. STEWART, M.D.,
of Philadelphia.

Affections of the ocular muscles occupy a position of no small importance in the study of the eye, its defects and diseases. Especially is this true since the relations of ocular conditions to disturbances of the nervous system and general bodily health have come to be appreciated.

A somewhat complicated system of ocular muscles adjusts the two eyes in such a manner as to

obtain *binocular* vision, the separate retinal images making but a single mental impression; but it is only when the adjustment of these muscles is perfect, and when corresponding portions of the two retinæ are thus made to receive the two images that single vision can be maintained. With every new adjustment of the eyes, either for nearer objects or for more distant ones, new movements and different degrees of tension are thrown on these muscles, and the response must be instantaneous. Such ever-changing and extremely nicely associated actions are demanded in no other part of the organism. It is, therefore, not surprising that this exacting service—when difficulties in its performance are encountered—should make excessive demands on the stock of nervous energy of the individual, or give rise to discomfort in the eyes, and even in other parts of the body.

Defects of the ocular muscles may be divided into two classes, viz.:

1. Overaction of one or more of the muscles.
2. Weakness (insufficiency), or paralysis of one or more of the muscles.

Of course, it is quite possible for these two abnormal conditions to coexist and thus exaggerate, while at the same time making more manifest, the defectiveness. The character of the symptoms manifested depends both on the degree of the defect and on the ability to overcome it by extra effort on the part of the eye-muscles. Thus, if there be only slight weakness of one muscle and but little tendency to overaction of its opponent, the eyes can be kept with their axes practically parallel. The only symptoms then may be fatigue on use of the eyes, irritation about the eyes themselves, or pain referred to various portions of the head and body. But, apart from the suffering thus occasioned, the eyes may seem strong and good, especially if the sight does not happen to be defective, so that suspicions are likely to be centered on other parts of the organism where some of the discomforts may have been manifested through reflex action of the nervous system.

The fact cannot be too strongly emphasized that slight defects of this character give rise to more suffering from the use of the eyes, to greater discomforts in other parts of the body, and to more serious disturbance of the nervous system, than do the highest degrees either of overaction or of insufficiency. This may seem strange, but the reason is not hard to find. For, when the defect is of such degree that the two eyes can no longer be kept with their axes parallel, or as nearly so as may be required for single vision, one or the other of them will be observed to deviate either inward, outward, or in a vertical direction. As a result we have some one of the forms of "squint," or *strabismus*.

One of two results must happen when the eyes can no longer be accurately directed toward the same object—either there will be double vision, or the retinal image in one eye will be suppressed. Should the first of these results happen the confusion and annoyance from seeing everything "double" will be very great; but the suppression of one image most frequently occurs, and the individual then uses only one eye at a time. Sooner or later, however, one of the eyes is likely to be called on to perform every act of vision, and the other is then in danger of becoming permanently disabled from want of use.

It must not be forgotten, however, that differences in the refraction of the two eyes often cause unconscious choice of the better organ for vision and consequent deviation, either outward or inward, of the other and less perfect one. This is likely to be the case when one eye is perfect, or nearly so, and the other is either highly hypermetropic, myopic, or astigmatic—or, when one eye is hypermetropic and the other myopic (anisometropia); when the latter anomaly exists one eye may be habitually used only for distant objects and the other only for those near by.

The intimate relation existing between the various forms of squint and the different errors of refraction is too little understood even by the intelligent and educated, and a brief consideration of the subject may be useful.

Strange as it must seem, squint is still by many ascribed to imitation, to teething, to fright, and to innumerable other conditions which can have nothing to do with it. Children have repeatedly been punished for squinting, when it would have been as reasonable and effective to punish them for having blue eyes instead of brown ones. Therefore, it cannot be too generally known that children with a certain degree of hypermetropia must squint by a necessity of their organization. It is the only means by which they can overcome the consequences of their ocular defect. On the other hand, those that have differently formed eyes have no cause or temptation to squint, and would probably be unable to do so even by any amount of carefully directed effort. About 90 per cent. of all the cases of convergent squint are directly produced by hypermetropia; yet the hypermetropic persons who squint are probably not more than two-thirds of the whole number. The rationale of this form of squint is that when a short-eyed (hypermetropic) child first begins to employ his vision carefully—at three or four years of age—it is necessary for him to exert a high degree of accommodation. This is more readily done if it is associated with convergence-effort, hence the latter becomes as habitual as the former. The *internal recti* muscles being thus continually exercised increase in strength, and it

eventually happens, by reason of their increased power and their frequent or continuous exertion, that they, like the muscles of accommodation, fall into a sort of spasm, so that the habitual and resting position of the eyes comes to be one of convergence. After a short time this convergence cannot be relaxed, and double vision of all objects must then be produced, unless one of the eyes rolls still further inward so that its image, having fallen upon a comparatively insensitive portion of the retina, may be neglected or suppressed by the brain. The intolerable inconvenience of double vision is thus generally removed by the act of squinting.

At first the eyes are usually affected alternately; but after awhile, either because one eye has better vision than the other, or because from some inequality between the muscles one is more easily rotated than the other, we see, as a rule, that one is always made the working eye and the other always the squinting eye.

The reason why some hypermetropic persons squint and others do not appears to depend mainly on the closeness or laxity of the tie between the functions of *accommodation* and *convergence*.

Divergent strabismus is much less common than the convergent variety, and is usually dependent on myopia, although it may occur in some cases of high hypermetropia or astigmatism. Very frequently it is due either to insufficiency or to paralysis of the internal recti muscles. In myopia the eyeball is elongated, and its range of movement diminished, so that the extreme convergence that is necessary to enable the patient to see objects within his range of vision tires out the inner recti muscles, and, for relief from the distress, one of them gives way, and the eye deviates outward. Sometimes the deviation takes place only after the individual has been working for some time and the eyes feel fatigued; in others it is only noticeable in looking at objects beyond the far point. Soon, however, the squint becomes continuous, and usually tends to increase. As soon as this occurs, whatever the variety of the squint, the vision of the deviating eye begins to undergo progressive impairment.

Therefore, the strabismus should be removed or overcome without delay; and it is obvious that treatment must be directed first to correction of every discoverable error of refraction, so as to bring the accommodation-effort and the convergence-effort into harmony. In the case of children in whom the squint is of low degree and has existed only a short time, the dangerous disfigurement can usually be removed by the continuous wearing of proper glasses. From the records of my own practice I judge that fully 75 per cent. of the strabismus occurring in the young can be overcome by careful measurement and correction of the refractive error. In a considerable number of the cases that I have treated with glasses alone this result has proved to be a permanent one. If the vision of the two eyes be different, that in the squinting one being more or less impaired, it is oftentimes of service to exercise the less perfect eye by itself for a certain fixed time daily, and it will usually be found that visual improvement progresses steadily until, after perhaps several months of this exercise and training, the powers of the two eyes become almost, if not altogether, equal.

But when the glasses have been worn a month or more without improvement, or when the squint is of very high degree, tenotomy must be performed, and so long as the vision of each eye is fairly good a perfect result can be expected if the glasses be worn in addition. If, on the contrary, the operation has been too long delayed until the vision of the squinting eye and the tone of its muscles have alike suffered, only a partial correction of the disfigurement can be hoped for. But for the sake of both vision and appearance every squint dependent on error of refraction, and not overcome by wearing of the proper glasses, should be subjected to operation.

Thus far our attention has been directed to defects of the ocular muscles unmistakably manifesting themselves in the eyes. But there is even a more numerous class of cases of this character in which the symptoms, in addition to being local, may manifest themselves to a considerable degree in parts of the body seemingly remote from the eyes. *Heterophoria* is the term now generally employed to describe those ocular conditions formerly very imperfectly and oftentimes quite incorrectly known as *insufficiencies*. But this class of muscular faults differs so widely from those at present under consideration that it has been thought best to give them separate consideration. Accordingly, the writer's experience in the treatment of the various forms of heterophoria will be given in another paper.

1537 Chestnut Street.

TREATMENT OF COMMON COLDS IN CHILDREN.

By HERMAN B. ALLYN, M.D.,
INSTRUCTOR IN PHYSICAL DIAGNOSIS IN THE UNIVERSITY OF PENNSYLVANIA; CHIEF OF THE DISPENSARY FOR DISEASES OF WOMEN AND CHILDREN, ST. JOSEPH'S HOSPITAL.

The affection commonly called a cold consists, in its mild form, in a congestion of the mucous membranes of the respiratory tract, attended first with an outpouring of serum and subsequently of mucus and muco-pus. The cold may be limited to any part of the respiratory tract, but the nose and naso-pharynx are the portions generally involved. Frequently the process begins in the nose or throat, but, when the patient comes under observation, the bronchial mucous membrane is most affected. The

stage of congestion is of brief duration, especially in those who are more or less subject to colds; hence, when seen by the physician, the affection consists in an acute or subacute catarrh of the mucous membranes involved.

The nature of the process, as seen in children, does not differ from that in adults. Children are, however, more prone than adults to develop bronchial catarrh, and the nasal catarrh is, in the former, more apt to become subacute and even chronic. The chief reason for the latter fact is doubtless to be found in the relative helplessness of children, who cannot cleanse their noses properly, and are often neglected by their parents. The spectacle of a neglected child of poor parents, with a disgusting muco-purulent discharge from the nose, is too common to occasion much comment. Another reason for the preponderance of these catarrhs in children is the difficulty attending treatment.

For a cold in the congestive stage, the child may be given a hot bath and then be put to bed, well wrapped in blankets, to encourage free perspiration. Veratrum viride and aconite may also be of distinct service; one or the other should be given in doses suited to the age of the patient to produce the effect desired. The atmosphere of the room need not be above 70° F., but while the mucous membranes are dry and parched a certain degree of moisture will be grateful to the little patient. This moisture can be provided by having a steaming teakettle in the room, or by keeping a pan filled with water on the stove. If there should be no stove in the room, a gas-jet may be utilized, first suspending over it on top of the shade a sheet of wire, such as is sometimes used to avoid the scorching of a table-cloth by a hot coffee-pot. The best device for use in the sick-room is a Bunsen burner made with a flat, circular top, two inches in diameter. The gas-jets are made to emerge horizontally in a radiating manner beneath this top. The whole Bunsen burner can be screwed on an ordinary bracket in place of the customary burner. On this burner a tin cup or other small vessel can be placed, and the room quickly filled with vapor, medicated or not, as desired.

In the first and second stages of a nasal catarrh, menthol is an excellent remedy. All are familiar with Cushman's menthol inhaler, which is an admirable apparatus for adults; its employment, however, cannot be made effective in the case of children; while with infants its use is out of the question. For the benefit of these little patients, therefore, I am in the habit of ordering menthol in crystals, having about a third or half of a teaspoonful placed in water and heated gently until it begins to steam. The menthol vapor is liberated very rapidly. One must regulate the quantity of menthol and water in accordance with the size of the room, especially its height, and not keep doors and windows open unless the vapor of the menthol should become too pungent. As the menthol vapor is irritating to the mucous membrane of the eye, I prefer to use it in the sleeping-room of the child at night after it is asleep.

In the second stage of acute rhinitis, benefit will be obtained from the local use of a weak solution of salt in warm water, say about a fourth of a teaspoonful of salt, or even less, to a tumbler of water. The salt-and-water solution is so soothing that children who get over the first fright at having any liquid put into the nostrils, no longer make any objection. I have found a medicine-dropper the most serviceable instrument for instilling the lotion. Thorough cleansing of the nasal passages cannot, of course, be performed in this way, but, on the other hand, there is less risk of causing an acute inflammation of the middle ear than if a syringe were used. At a later stage in the catarrhal process, the "alkaline and antiseptic" tablets, prepared according to a formula by Seiler, are better than simple salt and water. Half of one of the tablets should be crushed and then dissolved in a third of a glass of warm water. Not infrequently the resulting solution is too irritating; when this is the case a little salt should be added to it. Before the solution is introduced, the nasal passages should, as thoroughly as possible, be freed of secretion. The solution should be employed several times a day. An extemporaneous substitute for the tablets can be prepared by adding to a weak salt-water solution minute quantities of soda and borax. These are especially indicated when there is a tendency for the secretion to become thick and purulent and for crusts to form. I have found a five or ten per cent. solution of menthol in almond oil, applied to the nostrils with a pledget of cotton or a camel's-hair brush, also very helpful. The local applications, with inhalations of menthol at night, as a rule, soon effect a cure in a subacute rhinitis.

When a child is disposed to "catch cold" easily and frequently, there is often a strumous habit present, and the tonsils are often enlarged. In such cases cod-liver oil, begun in the autumn and taken until the following spring, effects a great improvement. I have seen no good results from the syrup of iodide of iron, but the syrup of hydriodic acid has seemed to do good.

As a rule, before a cold subsides, there is more or less bronchitis, from extension of the catarrhal process. Generally only the larger and middle-sized tubes are affected. Local remedies are here of great value. In infants and in very young children, a stimulating liniment containing oil of amber, camphor and oil of turpentine, with soap liniment as a

vehicle, is very serviceable. Poultices are, as a rule, not needed in mild cases of bronchitis occurring in the course of "colds." They can, however, be of great service. In using them in these cases I prefer to have them applied at night. They should be large enough to cover the entire chest, anteriorly and posteriorly. Strips of tape passed over the shoulders and fastened with safety-pins to the muslin of the poultice will aid in keeping the poultice in place. The poultices should be thin, and preferably made of flaxseed meal, with the addition of one part of good mustard to 16 or 20 parts of the flaxseed, according to the age of the child. The proportion of mustard should be small, as it is desirable that the child should sleep the entire night in one jacket-poultice.

When the flaxseed and mustard poultices are made up with glycerin and white of egg, a larger proportion of mustard can be incorporated, and the poultices can also be kept on longer, without risk of blistering the patient.

For older children, painting the chest gently in the morning with iodine once a day, until the skin becomes somewhat tender, is better than the application of liniments or poultices.

In these cases of mild bronchitis, inhalations of oil of turpentine, or, still better, oil of eucalyptus, are decidedly helpful. In the houses of the poor they can be given by keeping the patient in the kitchen and having on the stove or range an open vessel of water containing about a teaspoonful of the oil to a pint of water. It may be desirable to have the patient sleep in the kitchen at night.

Of internal remedies, nothing is better than the remedy almost universally employed—chloride of ammonium. It is best given at intervals of an hour or two, in doses appropriate to the age of the patient. When it has seemed necessary, I have sometimes induced the mother to take the chloride for the benefit of the nursing infant.

It is true that, so far as life is concerned, the majority of these cases would not terminate seriously if no treatment were employed. But it cannot be denied that in some cases a grave catarrhal pneumonia would be the ultimate result of a neglected cold, and in many others neglect to treat the case would lay the foundation for an obstinate chronic naso-pharyngeal catarrh, with all its unpleasant consequences. We cannot, therefore, afford to be indifferent to the treatment of these common colds.

310 North 40th Street.

Francis May Dickinson, M.B. Lond., has been appointed anesthetizer at the Alexandra Hospital for Children with Hip-disease, in London. She is said to be the first woman appointed to such a position in a London hospital, excepting the New Hospital for Women.

FOUR CASES OF TRUE PELVIC ABSCESS.

By CHARLES P. NOBLE, M.D.,
SURGEON-IN-CHARGE, KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.

During the past few years many abdominal surgeons have denied the occurrence of true pelvic abscess, or have admitted it only as a pathological curiosity. These men have permitted themselves to be blinded by their own personal experience, and have so lacked scientific spirit that they have accused other observers, equally worthy of credence, of incompetence. Because they have found pus in the pelvis only in cases of pyosalpinx, abscess of the ovary or purulent peritonitis, they have argued that true pelvic abscess—abscess in the connective tissue of the pelvis—does not occur; that, because they have found pelvic inflammation to be inflammation of the uterine appendages or peritoneum, therefore cellulitis does not occur. They have confused the relative with the absolute.

No one believes more firmly than I that the common form of pelvic inflammation is salpingitis, with peritonitis; and that when pus forms in the pelvis it is usually in the Fallopian tubes, the ovaries or within the peritoneum; yet I know that, as a *puerperal* condition, cellulitis and true pelvic abscess not rarely occur. Four cases of such abscesses have come under my notice. As a non-puerperal condition I have not seen cellulitis or true pelvic abscess, and I know of no evidence that such inflammation occurs, except after traumatism within the pelvis.

As to the relative frequency of true pelvic abscess as compared with the other varieties of accumulations of pus within the pelvis, I believe the former is rare, constituting only a small percentage of cases. I report these cases as a contribution to the subject of pelvic inflammation. In three, the evidence of their true nature is incontestable; in the fourth, it is perfectly satisfactory.

The first two cases have already been reported in full to the Philadelphia Obstetrical Society; so I shall merely refer to them. The first was operated upon by Dr. Longaker, some weeks after labor, Dr. Parish and myself assisting. The belly was opened, the tubes were found healthy, a second incision was made parallel with Poupart's ligament and a large quantity of pus was evacuated. The abscess occupied the left broad ligament and had burrowed between the uterus and bladder into the right broad ligament. Recovery followed.

The second case was operated on by Dr. Wilson, whom I assisted. The operation was similar to the first. The tubes were healthy. As the induration was in the region of the false pelvis, a second incision was made near the anterior superior spine of the ilium. A large quantity of pus was evacuated. Recovery followed.

The third case I saw in consultation with Dr. Himmelwright, March 2, 1890. The history, as given to me by Dr. Himmelwright, is as follows:

The patient had a miscarriage, January 3d, in the second month of pregnancy. One week later, symptoms of pelvic inflammation appeared, and a diagnosis of peritonitis was made. The patient got about by February 1st. After a week, pain was felt in the right inguinal region, and gradually increased in intensity, extending to the lumbar region. After another week (February 15th), she was unable to walk erect and to put her right foot firmly upon the ground, but had to stoop forward. During this time the temperature remained normal and there were no chills. At times the pulse was slightly accelerated. The pain continued to increase, and, on February 27th, a swelling was noticed in the right lumbar region. March 1st, the temperature rose to 101° F., and the pulse to 120, and there were slight chills. March 2d, I saw her. The temperature was normal, the pulse about 90. The right inguinal region was tender, suggesting, indeed, appendicitis, but there were no symptoms to warrant the supposition. A semi-fluctuant swelling was found in the right lumbar region. The next day this swelling had increased, and a hard mass was felt in the right inguinal region, extending as high as the ribs. The swelling in the lumbar region was opened and two or three pints of pus escaped. Introducing my index finger, it passed around the ilium into the iliac fossa. A rubber drainage-tube was introduced, and irrigated daily with a dilute solution of peroxide of hydrogen. For a few days large quantities of pus were discharged. The discharge gradually decreased and the tract rapidly healed—closing from the bottom.

It may be asked: "Why do I claim this as a case of true pelvic abscess?" The abscess was undoubtedly situated in the false pelvis, on the right side. I had my finger in it. The entire absence of bowel-symptoms excludes perityphlitis. The fact that, on examination, the uterus was found movable and the broad ligaments free from exudate—no fixation of the appendages—excludes pyosalpinx. Hence I take it the abscess was due to the breaking down of an infected pelvic gland situated behind the peritoneum, in the right iliac region.

The fourth case was in every way similar to the first. I saw the patient in consultation with Dr. Longaker, five weeks after labor.

The perineum had been torn and was sutured some hours after labor. Septic infection occurred, and for three weeks the temperature ranged between 100° F. and 103° F. During this time there was no pain or distention of the abdomen, or tenderness of the uterine appendages on examination. The perineal wound became inflamed, however, and the stitches were removed. During the fourth week all the symptoms abated. At the beginning of the fifth week the fever increased and tenderness in the left inguinal region became marked. Purulent matter had been discharged *per vaginam*, but whether or not it came from the abscess which had formed was questionable. On examining the patient five weeks after labor, I found her much depressed, in a typhoid condition, with a swelling above the pubes and to the left. Under chloroform, a mass of exudate was felt in the left broad ligament extending between the uterus and bladder, and plainly palpable above the pubes. My diagnosis was true pelvic abscess. I advised median section for an absolute exclusion of complicating pyosalpinx; then a second incision, parallel with Poupart's ligament, to evacuate the abscess. This was done by Dr. Longaker on the following day. The uterus, ovaries and tubes were found healthy; nor was the bladder involved. The omentum was, in places, densely adherent. The abscess was situated beneath the broad ligament and extended upward, behind and two inches above the ramus of the pubes. It contained about six ounces of thick pus, which was evacuated by an incision in the left inguinal region, directly above Poupart's ligament. As there was considerable hemorrhage, a glass drainage-tube was introduced into the median incision and a rubber tube into the lateral. The ultimate recovery was perfect.

The report of these cases simply confirms what has long been known, namely, that as a puerperal condition true pelvic abscess does occur.

2134 HANCOCK STREET.

CLINICAL MEMORANDUM.

THE ROLLER BANDAGE FOR THE PAINS OF TABES DORSALIS.

BY JOSEPH LEIDY, M.D.,
OF PHILADELPHIA.

THIS note is for the purpose of drawing attention to the results of a simple method for the relief of pain during the course of spinal disease, and especially tabes dorsalis.

Warmth, in the form of the warm bath, has long been recognized as of considerable utility in the treatment of this symptom.

The writer has frequently observed the relief afforded by the firm application of a roller bandage in the spasmodic and painful conditions so common in the extremities following traumatism. It occurred to him that the application of such a bandage (flannel or hose) to the part the seat of pain in locomotor ataxia might be of some service in mitigating the suffering. He found that the firm application of a bandage (flannel) from the toes to the upper third of the thigh was attended with great relief. During the past six months this method of treatment has been employed with most encouraging results. For the girdle pains a bandage, similar to the abdominal binder, firmly applied at the level of the abnormal sensations, afforded almost instant relief. The cases under observation had been treated with galvanism, with absolute rest, and the usual therapeutic measures, the majority of which had failed. The usefulness of this method depends principally upon the pressure and warmth that the bandage affords, combined with rest. It is worthy of further trial, if only as a substitute for morphia. In one case

the removal of the chest-binder was in several hours followed by a return of the girdle sensations. Two other patients invariably suffer a return of pain in the lower extremity on the removal of the bandage. In suitable cases the elastic stocking may, with advantage, be substituted for the bandage, as it does not interfere with locomotion.

The application of a roller bandage about the seat of pain was equally useful in several instances in which the area of pain was localized.

The method of treatment indicated will, I trust, commend itself for its simplicity, with the advantage of acting as a substitute for drugs.

237 South 13th St.

ORIGINAL LECTURE.

THE HEART: ITS MURMURS, THEIR DIAGNOSIS AND TREATMENT, AND THE ACTION OF THE CARDIANTS AS A CLASS.[1]

By WILLIAM HENRY PORTER, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND PATHOLOGY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

LECTURE IV.

Gentlemen: At our last lecture we finished the discussion of alcohol; to-day we shall consider digitalis and some of the other drugs that are of avail in treating cardiac lesions.

Probably there is no single drug that has received so much attention as *digitalis*, and even now there is a wide difference of opinion as to its action and true therapeutic value. Much of this doubt, however, is removed, and the action of the remedy made plain by a thorough knowledge of the chemical composition of digitalis. Then, by keeping clearly in mind the physiological laws that govern the animal economy, and carefully noting the changes that take place under the influence of digitalis, much that has heretofore been vague and uncertain becomes positive, and the action of the drug sharply defined.

Another important reason for many of the incomplete and contradictory statements in connection with digitalis —in fact, with most drugs, and especially when the deductions are based upon clinical evidence—is furnished by the fact that frequently conclusions are arrived at when two or more drugs of a similar, and sometimes even of a dissimilar, character are simultaneously administered. As a natural sequence, the evidence is worthless, for under such circumstances no human mind is able to decide to which drug justly belongs the credit, nor how much the action of one drug alters or modifies that of another. The correct and sure way to develop clinical deductions of real value is to administer one drug at a time to a large number of cases of similar character, and under as nearly as possible the same conditions. Then the drug under study should be continued in increasing doses for a period long enough to make certain that the system has been fully brought under its influence, and that the physiological limit has been reached and exceeded. In this way two distinct results are obtained: the physiological action of the drug is determined, and its toxic symptoms are clearly defined. Such evidence, together with that derived from experiments upon the lower animals, and with an accurate knowledge of the physiological laws of the body, enables us to obtain results almost absolute in nature. Such knowledge permits us to say exactly what can be accomplished by the internal administration of a single drug under given circumstances, and raises therapeutics from empiricism to an exact science.

After learning the actions of individual drugs, we have a rational basis upon which to combine to advantage in a single formula two or more remedies; thus intelligently united, they can often be administered with great benefit to the patient.

On this point I have always with profit remembered the teaching of Professor Edward Curtis, which practically was: "Never make a general contribution-box or postoffice of a patient's stomach by turning into it all the drugs at hand, hoping, perchance, to satisfactorily combat his ills with some of the agents used, but, rather, first accurately learn the physiological actions of the drugs to be administered; then give them with a definite and fixed purpose, and if the desired effect is not forthcoming, find out the trouble with the physiological mechanism of the patient, and do not condemn the drugs wholesale because the expected result was not at once obtained." It has always seemed to me that if we only more closely followed this admirable rule in using old and common drugs until thoroughly familiar with their full powers, rather than to rush madly after new and untried remedies, hoping in or through them to find specifics with which to combat complex and multitudinous abnormal physiological problems, our efforts would be better rewarded in the much more exact and satisfactory results obtained for our patients.

But let us return to the composition of digitalis. By reference to our table of cardiants,[1] we find that digitalis is quite a complex body, containing chemically five substances, four of which have been formulated. You further notice that these substances are composed of the elements carbon, hydrogen and oxygen, combined in varying atomic proportions. Most of them are classed as glucosides, because by boiling with acids or other agents they can be made to take up a molecule of water and be converted into glucose. Within the system it is quite probable that they are oxidized, forming compounds or by-products resembling alcohol, and are finally converted into and eliminated from the system as carbon dioxide and water. While passing through this transitional process, they evolve heat and energy, and stimulate the nervous mechanism and functions of the body with varying degrees of intensity.

Drugs of this chemical composition, as well as foodstuffs of an analogous nature, are best called CHO compounds, for by using this term no confusion can arise as to the character of the substance administered, and the chemical elements entering into its constitution are sharply defined, even though the exact atomicity of the drug is not given.

You will remember that in studying digestion and assimilation, and the results obtained by the use of alcohol, it was shown that there is a common tendency on the part of the physiological economy in dealing with

[1] A series of lectures delivered at the New York Post-Graduate Medical School and Hospital.

[1] The Medical News, July 25, 1891, p. 99.

these CHO substances to oxidize or split them up into compounds or by-products resembling alcohol, if that had not already been accomplished outside the body, as is the case when starch and sugar are first converted into alcohol before being introduced into the system, and ultimately to transform them into the final or excrementitious products—carbon dioxide and water. In some instances this result is quickly accomplished, while in others a considerable lapse of time may intervene before the bodies are completely changed. In all instances, however, while they are passing through this cycle of transformation to reach the final products to be eliminated by the excretory organs, they are continuously evolving heat and energy. This development of heat and energy and the consequent results, in some way stimulate the nervous system, and through it the functions of the body are excited to greater activity, or depressed below the normal standard. Whether these changes are due directly to the action of a specific drug *per se*, or result from a disturbance in the general body-oxidization and the development out of the proteid bodies of various intermediate nitrogenous compounds, has not as yet been fully made out by the physiological chemist. In the case of digitalis, however, the latter factor seems to be sustained, for when digitalis is administered in full doses, the proportion of uric acid in the urine is augmented, while the percentage of urea often falls, an evidence that there is a marked tendency on the part of the system, when under the influence of the drug, to imperfectly oxidize proteids. The diminished excretion of urea could be explained by the increased rapidity of the renal circulation, but in such a case the excretion of uric acid ought also to be diminished; but as this is not the fact, the condition must be dependent upon disturbed oxidization.

In diseased conditions, stimulation by digitalis, within physiological limits or temporarily, may be of service to the animal economy, in the same way as is alcohol, by calling into action the reserve force of the system. If, at the same time that this increased vital activity is developed, the requisite quantity of proteids can be digested and assimilated to fully compensate for this excessive work, a positively improved condition may be the final result. But, owing to the high arterial tension induced by the action of digitalis, this desirable nutritive condition cannot be permanently maintained. For we have already found that the nutritive interchange between the blood and perivascular tissues is effected exclusively through the arterial capillaries.[1] With this unduly high arterial tension, the blood is sent through this vascular area into the venous capillaries and veins so rapidly that the nutritive interchanges are very greatly impeded or totally abolished. Consequently, if digitalis is given in large quantities or continuously it prevents the nutritive fluids and pabulum from gaining access to the perivascular tissues and system, but, at the same time, it augments vital action, interrupts proteid metabolism, both by disturbing oxidization and by these marked changes in the vascular phenomena.

With these fundamental principles well in mind, we are in a position to state the physiological and therapeutic value of digitalis.

[1] THE MEDICAL NEWS, July 25, 1891, p. 98.

Before considering the action of digitalis in detail, it will be well to study the active principles a little more closely, if we wish to understand accurately the physiological and therapeutic results to be obtained from its use. We find that digitalis contains four decidedly active principles, three of which are said to have almost identically the same action, while the fourth, digitonin, has an effect almost opposite, poisoning and weakening the muscular activity of the heart and lowering the arterial tension.

Therefore, in using powdered digitalis, one of its contained elements is opposing the action of another set. The same holds true when the infusion is used, because the digitonin is freely soluble in water, but the digitoxin is insoluble and the digitalin and digitalein are only sparingly soluble in water. But with the tincture, the reverse is true; digitoxin, the most active stimulating principle, is freely soluble; digitalin and digitalein are sparingly soluble, while digitonin is insoluble in alcohol. Consequently, when the tincture is used, and especially a tincture made from the fresh leaves, we have in solution the three elements that act alike and comparatively little or none of the opposing agent, digitonin, to counteract the action of the other three. Therefore, in speaking of digitalis and its actions, the tincture is the preparation to be used.

Briefly and concisely stated, digitalis shortens the systole, prolongs the diastole, increases the intrinsic muscular contractility of the heart, poisons the muscle protoplasm, heightens arterial tension, thereby reducing the nutritive interchange between the blood and the perivascular tissues, at the same time primarily lowering the blood-pressure in the splenic arcade and renal vessels. The well-known physiological law that when the heart's action is augmented and the general arterial tension heightened, the blood-pressure in the splenic arcade is lowered, and *vice versa*, enables us to clearly explain the diuretic action of digitalis. It also perfectly elucidates the reason why digitalis acts so well as a diuretic in some instances and entirely fails in others.

Cognizant of these physiological laws, we find that when digitalis is given to a healthy individual, the heart's action is slightly augmented and the general blood-pressure is increased, while that of the splenic arcade is decidedly lowered. Following upon these vascular changes, and as a necessary sequence, an abnormally large volume of blood passes through the vascular areas of the kidneys; and owing to the generally increased blood-pressure, the general rapidity of the blood-current is increased. Now, if there is no impediment to the escape of venous blood from the renal veins, the blood simply flows more rapidly through the organ, so that the augmented volume is fully accommodated. The increased rapidity of the current of blood in the renal vessels allows much less time for each volume of blood to be in contact with the bases of the epithelial elements; consequently, a smaller quantity of effete material is taken up from the blood-stream by the vital action of the epithelial cells and necessarily a proportionately smaller quantity of waste matter is discharged by them into the lumen of the uriniferous tubules. The same is true for the transit of fluid through the walls of the capillary vessels forming the Malpighian tufts. In this way the increased volume of blood is counterbalanced by the greater

rapidity of the blood-current; and the physiological excretory function of the renal gland practically remains unchanged.

If, on the other hand, digitalis is administered under pathological conditions in which the action of the heart is feeble, the general arterial tension low, and an obstruction to the exit of blood from the renal vessels exists—as is the case in a general venous engorgement from any cause, or better in the parenchymatous lesions of the kidneys, in which the secondary or venous capillaries of the organ are obstructed by the pressure exerted by the swollen epithelial cells lining the convoluted and straight tubules—an entirely different result is obtained. Now, the digitalis increases the power of the heart's action, heightens arterial tension and raises the blood-pressure to the normal standard or above, and greatly increases the volumetric tension in the splenic arcade and in the renal arteries; but, owing to the venous obstruction existing beyond or within the kidney, the blood cannot be accommodated, so that it passes more rapidly through the renal vessels. As a result, the increased volumetric pressure brought to bear upon the capillaries constituting the Malpighian tufts is enormously increased and one of four things must occur: *First*, the water of the blood may find its way into the uriniferous tubules; *second*, the venous obstruction may be overcome and the blood more rapidly carried through the kidneys; *third*, the vessels forming the Malpighian capillaries may rupture and allow the blood to pass out into the uriniferous tubules to be discharged with the urine; *fourth*, the renal circulation may be arrested. The first and second conditions most commonly result. First the water of the blood passes off through the Malpighian tufts into the uriniferous tubules, thus diminishing the volume of blood to be forced through the secondary plexuses of the kidneys; a little later the increased volumetric pressure, which has been somewhat reduced by the escape of the water, causes the current of blood to move more rapidly through the secondary capillary plexuses in the kidneys. As a result, a large volume of blood moves out of and through the kidneys in a given space of time, more blood is brought in relation with the renal cells and an increased quantity of effete material is taken up from the blood by the physiological action of the epithelial cells lining the uriniferous tubules, and discharged into the lumen of the excretory ducts. Thus, by converting an almost stagnant renal circulation into one of normal or even augmented activity, the elimination of both the watery and solid ingredients of the urine is greatly increased and the body protected from the poisonous effects that must follow their retention in the system.

From this it naturally follows that when the heart's action is fully up to the normal standard, and the renal circulation unobstructed, digitalis will simply drive the blood through the kidneys more rapidly, and will not produce diuresis. In diseased conditions in which there is no venous obstruction, if any effect is produced upon the renal secretion the elimination of the solids will be diminished. Digitalis first stimulates and then weakens the heart's action; by the high tension produced the nutritive system is physiologically starved.

Considering the heart simply as a mechanical pump, wholly independent of the physiological laws governing its movements and nutritive vitality, we ought to be able to favorably influence its action by the internal administration of digitalis, especially if there are organic changes in the valves. This line of reasoning, however, is inconsistent, because it assumes a physiological action for the drug and a mechanical action for the heart, independently of the normal laws governing the movements of the organ. This one-sided method of reasoning is largely responsible for the differences of opinion and the variable results obtained from the internal use of digitalis. On the other hand, if we keep clearly in mind the physiological and mechanical laws associated with the heart's action and the drugs acting upon the organ, accurate deductions can be made.

Beginning with the mitral lesions, we find, from a purely mechanical standpoint, that when digitalis is administered in a case of mitral stenosis, the mechanical defect is somewhat compensated for by a shortening of the systole and prolongation of the diastole, thus affording the left auricle more time to force blood into the ventricle. If, now, the force of the systole is augmented, in addition to the shortening of its duration, a larger volume of blood will be sent into the aorta; if the arterial tension remained normal, the general nutritive condition of the system would be improved.

In case of mitral incompetency, the time during which regurgitation can occur is shortened; and here, as in the stenosis, if the force of the systole is augmented, in addition to the shortening of its duration, then the same improved condition of the general circulation and nutrition is established. If, at this point, heightened arterial tension and increased activity of circulation would establish a more perfect and effectual nutritive condition—as Dr. Fothergill assumed that it did—digitalis would be the remedy *par excellence* in the treatment of organic mitral affections; but, unfortunately, physiology teaches the reverse: nutritive interchange is not instantaneously effected between the blood and the perivascular tissues, but depends upon a somewhat slow flow of a large volume of blood through the arterial capillaries. When the blood has passed into the intermediate and venous capillary systems and on into the veins, nutritive activity is practically at an end; with high tension and active circulation, nutrition is reduced to the minimum or totally abolished.

Clinically, this law is fully sustained, for it is a well-known fact that, when high tension is developed that cannot be overcome, death rapidly ensues.

These physiological vascular and nutritive laws clearly explain the so-called cumulative effects of digitalis; they also elucidate the good effect that follows its temporary use, and the bad results so frequently observed when the drug is taken continuously, as well as the empirical statement, so commonly found in text-books, that the administration of digitalis must be intermittent and not continuous.

While digitalis mechanically improves the conditions associated with mitral lesions, by heightening the tension in the aorta and coronary arteries it at the same time rapidly lowers the nutritive supply of the cardiac muscle; the blood is forced through the arterial capillaries of the heart so rapidly that sufficient time is not allowed for the nutritive pabulum to be taken up by the perivascular structures. As digitalis is a non-nutritive

compound capable of calling into action the inherent and vital forces of the cardiac muscle, it will of necessity temporarily improve the mechanical action of the heart and cause it to accomplish more work, as a result of which the histological integrity of the muscular elements is impaired; at the same time the drug lowers the nutritive supply and causes progressive deterioration of the muscular tone.

Consequently, when digitalis is given, it becomes almost impossible to develop a truly physiological and compensatory hypertrophy, and as the attainment of this is the chief object in the treatment of all cardiac affections in which the mechanical action is defective, the use of this drug or any other of similar nature is constantly thwarting our endeavors. With a fully developed and sustained cardiac hypertrophy sufficient to compensate for the mechanical defect in the valvular apparatus, the condition of the patient is physiologically normal and may continue so for years.

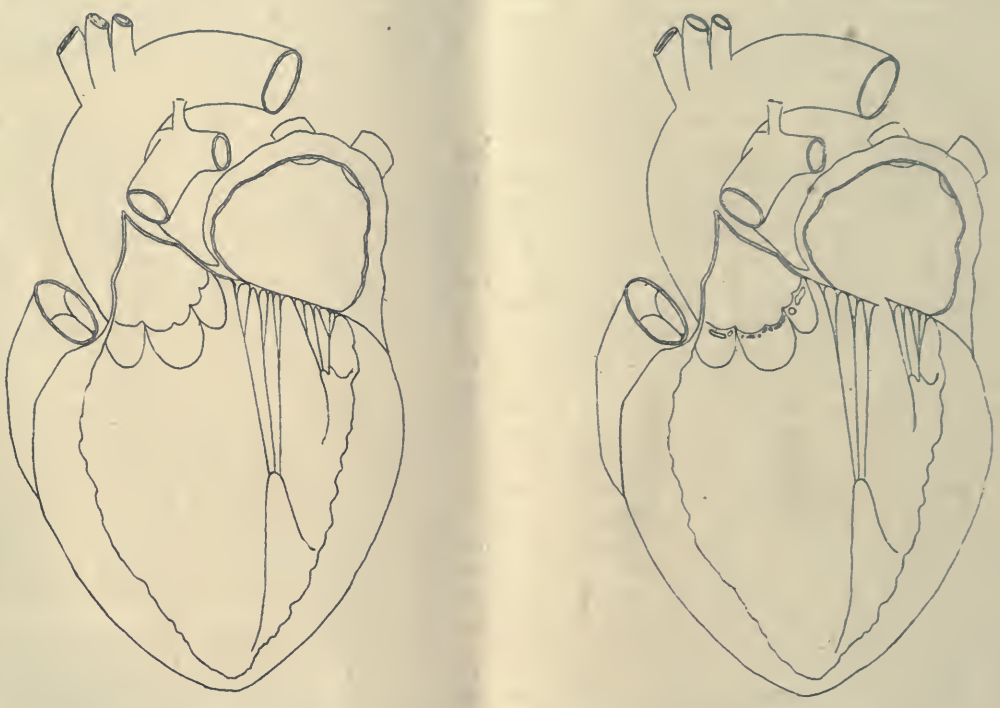
muscle and regulating the rhythm of the heart, this functional derangement can be rapidly dissipated and the action of the heart and the valvular sounds restored to the normal.

The slowing of the heart's action under the influence of digitalis appears largely due to the increased resistance to the onflowing blood by reason of the unduly high arterial tension, and later, to the impaired nutritive power of the cardiac muscle, rather than by a direct action of the drug upon the organ or its nervous mechanism.

Viewed in this light, digitalis can only be of temporary service; its continuous administration in doses sufficient to produce the decided action of the drug must of necessity be followed by harm.

As the weight of clinical, experimental, physiological and theoretical evidence all conclusively show that digitalis damages the heart-muscle by cutting off its nutritive supply, and that it has little or no tendency to

a FIG. 1. *b*



a. Normal heart, showing perfect closure of the mitral valve, and normal aortic semilunar valve-segments.

b. Functional derangement, showing imperfect closure of mitral valve, but without organic changes; also, congenital perforations in the aortic semilunar segments.

In the common condition of functional regurgitation at the mitral orifice so well illustrated in Fig. 1 and fully explained in the first lecture[1] on this subject, digitalis, by temporarily increasing the working power of the heart, and, at the same time, still more decidedly impairing the nutritive condition of the cardiac muscle —as already explained—causes the mitral regurgitation to remain stationary or even to progress, and the murmurs are heard with greater intensity. On the other hand, by increasing the nutritive supply of the cardiac

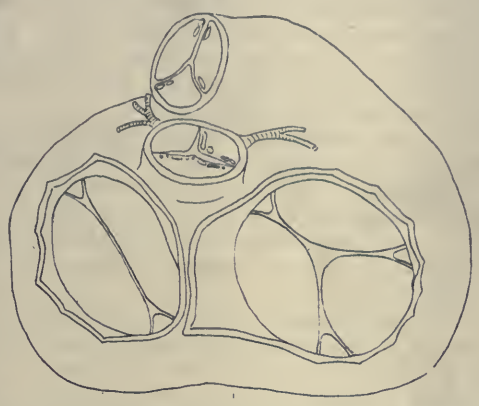
[1] THE MEDICAL NEWS, May 23, 1891, p. 585.

produce or maintain a compensatory hypertrophy of the cardiac muscle, I have ceased to consider or to use digitalis as a cardiac stimulant, and especially as we have so many far more efficient agents.

In aortic lesions there can be no possible excuse for using digitalis. Admitting that digitalis augments the force of the heart, in addition to shortening the systole, and thus enables a larger volume of blood to be thrown into the aorta, the increased arterial tension and the prolonged diastole permit of increased regurgitation. Accompanying this there is the progressive cutting off of the nutritive supply of the heart. Were it not for the

heightened tension produced by digitalis and the consequent diminished nutritive supply to the cardiac muscle, and the increased activity of circulation in the coronary arteries, the drug might be used with advantage in aortic stenosis, but never in aortic incompetency.

Fig. 2.



Illustrating the congenital perforations in the aortic and pulmonary semilunar segments.

Many cases of aortic regurgitation, however, depend upon congenital perforations in the semilunar segments, as illustrated by Fig. 2 and explained in my second lecture on this subject.[1] These defects in the valve-segments often give rise to decided physical signs, and the diagnosis of organic lesions of magnitude—while, in truth, the mechanical leakage is quite small, the condition does not grow worse, and the physiological actions of the heart and circulation are not at all disturbed. In these cases, the administration of digitalis, in moderate doses, appears to strengthen the heart, so long as the administration is intermittent and the dose not large enough to give rise to positively bad effects. In this way it has been conceived that the drug can be used to advantage in aortic regurgitation; but used continuously in case of a truly organic lesion, it has caused not only serious but absolutely fatal results.

I have frequently been asked why it is that, digitalis being such a perfect drug as it is claimed to be, patients are but temporarily improved under its influence, but almost invariably get worse before the heart is gotten into a desirable condition. I trust that this question has been satisfactorily answered and explained by the facts presented in connection with our knowledge concerning digitalis.

MEDICAL PROGRESS.

A Teratological Curiosity.—There has recently been on exhibition in Paris a unique twin-monster, of the class pygopagus. The twin-sisters were born thirteen years and a half ago, in Bohemia, the labor, at which the village midwife officiated, presenting no particular difficulty. The mother, then twenty-two years old, had, two years previously, given birth to a girl of normal physique. The sisters are of very fair complexion, small for their age, resemble each other closely, and, when seen seated side by side, hardly convey the impression that they are united by so intimate an anatomical bond. Directly, however, one sister moves, the other is constrained to follow. The trunks are not parallel, the axes of the spinal columns forming an angle the apex of which is situated below at the junction of the pelves. Each trunk is twisted on itself at an angle of about 45°, so as to turn the faces forward and to incline the heads somewhat inward. Viewed in profile, it is at once seen that the sisters are united by the posterior wall of the pelves, just as were Hélène-Judith, a description of whom is met with in old works on teratology. The apex of the angle or V formed by the conjunction of the trunks is constituted by the intimate soldering, in the median line, of the sacral and coccygeal regions, and, laterally, of the four buttocks. The composite pelvis is abnormally large, composed as it is of four ossa iliaca, from which spring four well-formed lower extremities. Below the sacral junction, between the four buttocks, in the quadrilateral and dome-like space bounded by the four thighs, is found a region the description of which is of special interest. At first view, one would be inclined to believe that the space contained only azygos parts—viz., one urethra, one vulva and one anus. There is, in effect, only a single urethral orifice from which urine has been seen to issue. But as no sound has ever been introduced through this opening, the existence of two distinct bladders can only be inferred from the fact that the desire to urinate is not simultaneous in the sisters. Immediately anterior to the urethra is situated a single, fairly well-developed clitoris. From either side of this organ is directed from before backward a rudimentary labium minus. Encircling all these parts is a nearly oval collar, representing two labia majora, which limit a single vulva. This vulva contains two vaginæ, distinctly separated from each other by a complete partition, the entrance to each vagina being guarded by a crescent-shaped hymen. Between the two vaginæ and the single anus, situated at a short distance behind, is a frail perineum. The rectum is probably single up to a certain height (no rectal examination was allowed), for the desire to defecate is simultaneous; but it is certain that there exist two large intestines. The anus, clitoris and urethra are situated in the median line corresponding with the antero-posterior diameter of the vault formed by the sacro-gluteal junction. Breisky, who, in 1878, was professor at the German Medical Faculty of Prague, and who examined Rosa-Josepha when the latter were only six months old, states that he then noticed a remarkable asymmetry of the crania, very plainly appreciated when the heads were viewed from above and behind. The foregoing details will have prepared the reader for the information that in Rosa-Josepha we have to deal with two perfectly distinct psychical personalities. The only parts that can be considered common property are the lower portions of the genito-urinary apparatus (urethra, clitoris and vulva), the rectum and perchance the lower end of the vertebral canal. That they are independent beings is evidenced by the fact that one sister can sleep while the other remains awake; one can occupy herself at a task that does not interest the other; one likes beer, the other wine; one is very fond of salad, which the other dislikes, etc. Moreover, one sister may be thirsty without the other experiencing any such sensation. The radial pulses do not beat syn-

[1] The Medical News, May 30, 1891, p. 611.

chronously. There is a zone of common sensibility to afferent impressions, limited to a cutaneous space corresponding to the transverse mass situated between the two pelves. The movements of this conjoined twin are free and graceful enough. When one sister walks, her companion is not obliged to follow backward. Generally, the two inner feet advance together, to be followed by the synchronous movement of the two external ones. Either sister can walk while supporting the weight of the other. In order to accomplish this feat it suffices for the bearer to incline her body anteriorly, while the other one, having lifted up her feet from the ground, reclines on her sister's loins. They have been seen to progress on only two and on three legs respectively, mount the stairs, dance, etc. In waltzing they are very proficient. One had the croup when twelve months old without communicating the disease to her fellow. Soon afterward the non-croupous twin was seized with convulsions, the other remaining unaffected. How can we explain the existence of such a phenomenon as Rosa-Josepha? Dareste has shown that the explanation lies in the accidental fusion of two germs developed in a single ovum, and enclosed in a single chorion. The two germs, represented at the early period of development by their primitive streaks, must be inclined the one toward the other, so as to form a V, the union occurring at the future sacral region. In the case of Rosa-Josepha this must have taken place toward the end of the first fortnight after fecundation, when the medullary canal had not quite closed posteriorly. The single urethra, clitoris, vulva and rectum are easily explicable on this theory; but, as the allantois is already formed, these conjoined twins probably always possess two large intestines, two bladders and two uteri.—*Paris Correspondence, Lancet*, July 18, 1891.

The Value and Limitations of Tuberculin.—From a study of nineteen cases of pulmonary tuberculosis treated with tuberculin, DENISON in a paper read before the Colorado State Medical Society, formulates the following conclusions:

1. Tuberculin is a remedy to be classed with stimulants, hypophosphites, chloride of gold hypodermatically used, exercise, high altitudes, and cold, dry air; it is too powerful to be indiscriminately used, and the cases in which its use would be advantageous remain to be determined.

2. It is unreasonable to expect that tuberculin will be useful in septicemia or in any poisonous blood-state other than tuberculosis.

3. Tuberculin should be used not as a substitute for, but as an aid to climate and other natural methods of cure; especially are high altitudes and exercise indicated, if not otherwise contra-indicated, because they favor pulmonary expansion and aëration.

4. Only local reactions in the affected tissues are to be aimed at. High or prolonged febrile reaction is, if possible, to be avoided. The minimum dose that will accomplish this purpose is to be used; it is preferable to permit at least a day to elapse between the subsidence of one reaction and the possible production of another.

5. Deficiency of pulmonary expansion and aëration, whether a result of the injection of tuberculin or of pre-existing conditions, is a contra-indication to persistence in treatment.

6. The test for the proper expansion and aëration of a tuberculous or fibro-tuberculous lung consists in a comparison of the spirometric record with the bilateral measurements of the chest and with the physical signs.

7. The stage of the pulmonary affection has not so much to do with the question of using tuberculin as has its extent and localization, the febrile course and the expansion and aëration of the affected lung. It were desirable that the average daily range of temperature should not exceed two degrees, and the patient should be much of the time in the open air.

8. The diagnostic value of the injection of small quantities of tuberculin is borne out by the manifestation on auscultation at suspected or affected spots in the pulmonary structure of an *increased roughness of a previously existing broncho-vesicular respiration;* or by *high-pitched harsh breathing* that previously had been but enfeebled.

9. With the appearance of unfavorable physical signs, indicative of bronchial obstruction, or moist râles suggestive of softening, it would be well to intermit the injections of tuberculin and for a while substitute those of iodine, or to give iodine in some form internally, or to use inunctions of the oleate of mercury over the affected lung, until a resumption of the treatment with tuberculin seems safe.

10. As to the permanence of the effects produced by treatment with tuberculin, there is to me no reason to expect more lasting results than are to be obtained from any other agency. There is no reason why, after the disappearance of bacilli from the sputum, in the course of treatment with tuberculin, they should not again appear, as they do in the case of climatic treatment and after injections with the double chloride of gold and sodium. It is probable that the effect of tuberculin is temporary. Immunity from tuberculosis cannot be hoped for, except under such other conditions of healthful living as would insure it. Tuberculin is not a remedy suitable for the great majority of pulmonary consumptives in preference to a proper change of climate. Its efficacy does not equal that of the latter, to which, however, it may serve as an important adjuvant in a large number of selected cases.

Glioma of the Retina.—COLBURN (*Chicago Medical Recorder*, July, 1891) reports five cases of glioma of the retina in children four months, eight months, three years, and six years old, respectively (in one the age is not given). In two, after the lapse of a considerable interval, recurrence had not followed enucleation of the affected eyeball. One died with meningeal and one with cerebral symptoms. In the fifth, the disease had progressed to such a degree as to forbid operative interference.

Sunstroke.—The following circular has been issued by the Pennsylvania State Board of Health:

This dangerous illness is caused by excessive heat of the blood (from 100° to 110° F.), which produces great depression of the nervous system. It occurs during the hot season of the year, and usually to those exposed to the hot sun, but it sometimes occurs at night, and also to those exposed to great heat, in glassworks, laundries, furnaces, bakeries, iron-foundries, and the engine-rooms

of steamships. It is largely confined to the hot, close streets and passages of the cities, but is not unknown in the country. Those habituated to the use of alcohol, and the delibitated, are especially predisposed to attacks.

Dark, close-fitting clothing and such as compresses the chest and neck should be avoided during the heated term. For those obliged to labor in the sun, light clothing and a straw or light felt hat, permitting free circulation of air, are preferable.

On very hot days, one should drink frequently, but in small quantities. A large quantity of any iced drink entering the stomach at one time is injurious.

Cool water, into which oatmeal has been stirred, is a safe and refreshing drink. Water should not be drunk in considerable quantities at a temperature lower than that of spring water, namely, 56° F. Immediate death is often caused by "ice-cold" drinks. The immoderate use of alcoholic beverages is also dangerous.

The sleeping-room should be freely ventilated and cool. Constipation of the bowels should be avoided. When overheated, work slowly, frequently cooling the head, chest and back with cold water. Keep a wet cloth or some green leaves in the hat on the head, frequently wetting them with cold water. When, on a very hot day, the skin becomes dry and uncomfortably hot, a burning sensation is felt in the head, and the face is flushed and the eyes bloodshot, with a frequent tendency to urinate, the person should immediately quit work, retire to a cool place and rest in quietness; and if not speedily relieved of the sensation of heat, take a cold bath.

The attack may be very sudden and take the form of delirium in which the patient rushes wildly about and may attack those around him; or he may become weak and sink to the ground as if in a fainting spell or stupor. Loss of consciousness and mental disturbance may be only partial. Nausea or sickness at the stomach often precedes the onset. Convulsions may occur.

Sunstroke must be carefully distinguished from heat-exhaustion, in which the general symptoms are similar to those of sunstroke, but the bodily temperature is below the normal. The difference can be at once recognized by feeling the skin underneath the clothing: in sunstroke the skin feels burning hot; in heat-exhaustion it is cold.

Treatment.—1. Carry the patient into a cool and shaded place, where there is plenty of pure, fresh air.

2. Strip his clothing to the waist, and place him in the recumbent position.

3. Pour cold water (ice-water is best) upon his head and chest until consciousness returns. The points at which the blood may be most effectually cooled are the wrists, the temples, and the ears, because at those points it approaches the surface more nearly in considerable quantities. Ice may be applied to the head and chest and rubbed over the body, but if the skin is cold no ice should be applied. Internally, small doses of brandy may with success be administered; but in all cases of sunstroke the patient should, as soon as possible, be placed in charge of a competent physician.

The patient should do no mental work for some months, and should keep free from all excitement. Persons who have once suffered from sunstroke are liable to a second attack. Insanity, in some of its varied forms, frequently follows sunstroke.

In heat-exhaustion give alcoholic stimulants and place the patient in a hot bath, so as to raise the bodily temperature.

Ignipuncture for Hypertrophied Tonsils.—Cullen (*Cincinnati Med. Journ.*, 1891, vi. 5) states that the galvano-cautery may be employed either to completely dissect the hypertrophied tonsil or to cause a diminution in size by cicatrization from puncture. After an application of carbolic acid and cocaine, he introduces at one sitting an appropriate electrode at moderate, red heat into two or three lacunæ close together, and repeats the procedure in from three to six days. The operation is followed by a soothing antiseptic spray. If the subsequent hemorrhage should be considerable he administers tannic and gallic acids.

The following are the main indications for the employment of the galvano-cautery in the treatment of hypertrophy of the tonsils: When the tonsils have ceased to perform their functions by reason of interstitial thickening and occlusion of their lacunæ, the mouths of the crypts becoming blocked by sebaceous matter, which rapidly decomposes, they form an excellent culture-medium for various pathogenic germs, which may ultimately find their way into the lymphatic system; when a tonsil shows itself liable at short intervals to become inflamed and give rise to peritonsillar abscess; when the tonsil is so situated that it is a matter of difficulty and danger to use the tonsillotome, with extensive adhesion of the pillars, and a liability to severe hemorrhage; in all cases in which the patient is of a hemorrhagic diathesis or in other cases in which alarming hemorrhage is feared; when patients will not consent to the use of the knife and yet the demand for the removal of the gland is imperative.

Maternal Impressions and Monstrosities.—Ground (*Northwestern Lancet*, August 1, 1891) reports the case of a woman who, in the eighth month of pregnancy, aborted with a monster, weighing five pounds. The vault of the skull was absent, the cranial cavity being occupied by the meninges and a small mass of cerebral structure. The spinal processes and the lamina of the cervical and dorsal vertebræ were wanting, so that the cord was exposed as far down as the lumbar region. In addition, there was a large umbilical hernia. Some time later, a pregnant woman, coming for consultation, saw the specimen preserved in a jar. Naturally frightened, she could not exclude the hideous picture from her mind. In the course of several weeks this woman aborted with a fetus of four months—a monster, crudely resembling that of the first case; the vault of the skull and the spinal canal were open. Both women were primiparæ. The first has since given birth to a well-developed female child. Both monsters were of the female sex. In the first a history of a mental impression was wanting.

Hemiplegia followed by Restoration of the Knee-jerks in a Tabetic.—Hughlings Jackson and James Taylor (*British Medical Journal*, July 11, 1891) have reported the case of a man, forty-nine years old, with the symp-

toms of hemiplegia in addition to those of tabes dorsalis: lightning pains, ataxia, contracted pupils that reacted with accommodation but not on exposure to light, and absent knee-jerks. There had been two attacks of hemiplegia, with an interval of three days. Forty-seven days after the second, the knee-jerk was elicited upon the right but not upon the left. On examination, twenty-two months subsequently, the right knee-jerk was readily elicited, the left but feebly on reinforcement. The explanation of the phenomenon must be dependent upon a heightened irritability of the ganglion cells of the anterior horns of the spinal cord, occasioned by the secondary descending degeneration of the crossed and direct pyramidal tracts.

Immunity from the Diplococcus Pneumoniæ Conferred by a Glycerin Extract of Hopatized Lung.—VASSALE and MONTANAIRE (*Gaz. d. Ospit.*, No. 19) removed soon after death from a case of croupous pneumonia in the stage of gray hepatization about an ounce and a half of pulmonary tissue, which they cut into small pieces and placed in a steam sterilizer, then rubbed up, and added thirty parts each of distilled water and glycerin; the mixture was well shaken and filtered. Of this filtrate nine c.c. were injected, in three parts, into each of two rabbits. These and two control-rabbits then received one c.c. of a virulent emulsion of a hepatized lung. The control-animals succumbed to pneumonia, the protected animals survived. A rabbit which first received an injection of a glycerin extract of a healthy lung and then an inoculation from a hepatized lung, died of pneumonia. —*Wiener klinische Wochenschr.*, June 4, 1891.

Psorosperms in a Case of Paget's Disease of the Glans Penis.—PICK (*Prager medicin. Wochenschr.*, June 17, 1891) has reported to the Society of German Physicians in Prague, the case of a man who presented an eczema of the glans penis that had existed a year and a half. The diseased weeping surface was ulcerated and displayed a tendency to proliferation of the epithelium, with the formation of nodules. An existing phimosis was thought to be the source of the disorder and was removed. Primary union took place and the condition improved—soon, however, to recur. The new nodules were removed. These presented microscopically, in addition to the small-celled infiltration common to eczema, typical carcinomatous proliferation within which was an abundance of psorosperms. Upon this a diagnosis of Paget's disease was made.

Operative Treatment of Morphine-poisoning. — In the *Detroit Emergency Hospital Reports*, June, 1891, is reported the case of a girl, twenty-one years old, not an opium-habitué, who had taken twenty grains of morphine. The respirations were but four in the minute and the coma was profound. Artificial respiration by Sylvester's method proved insufficient. The trachea was opened, a tube introduced, a hand-bellows attached and respiration thus maintained for three hours. At the end of this time, the reflexes returned and the restoration of the patient was assured. The bellows must be so constructed as not only to introduce air into the bronchi, but also to allow for the escape of the vitiated air. The action should, as far as possible, correspond to the usual respiratory action.

The Re-union of Cut-off Fingers.—POPOFF (*Vratch*, No. 14, 1891) has reported the case of a soldier, who, while hewing a block, struck his left hand with an axe. Thirty or forty minutes after the accident the index, middle and ring fingers were found to be completely severed through their first phalanges, at the line of the interdigital fold, and the little finger through the first inter-phalangeal joint, all four being held by bridges of skin. The detached parts were at once replaced and sutured. The little and index fingers united perfectly, though with impaired mobility. The second and third phalanges of the middle finger sloughed, but the first united. The ring finger became gangrenous and was thrown off.—*The Provincial Medical Journal*, June 1, 1891.

Public Institutions as Sources of Impairment of Vision.—LIPPINCOTT (*Pittsburg Medical Review*, July, 1891) maintains that blindness is increasing in the United States disproportionately to the increase in population. He holds that granular conjunctivitis is an important factor in the causation of impairment of vision, that it is a contagious disease, the dissemination of which is facilitated by the agency of orphan asylums, orphan and reform schools, and similar institutions, from which it can be excluded by rigid inspection (including systematic eversion of the eyelids), and the spread of which can be checked by absolute isolation of infected cases, together with appropriate hygienic regulations.

The Treatment of Surgical Tuberculosis.—The Paris correspondent of the *Wiener medizinische Presse*, July 12, 1891, states that at a recent meeting of the Académie de Médecine, LANNELONGUE presented a new method of treating tuberculosis, especially surgical tuberculosis. The treatment is not directed at a local destruction or inhibition of the growth of the tubercle bacilli, but at a conversion of the tuberculous tissue and its immediate surroundings into fibrous tissue—in a word, at encapsulating the tuberculous mass, which is accomplished by injecting about it small quantities of chloride of zinc. The results thus far obtained have been gratifying.

The Contracted Pelvis as an Evidence of Degeneration.—As a result of his investigations, WIEDOW (*Münchener medicin. Wochenschr.*, June 30, 1891) concludes that the various types of deformed pelves are but expressions of an abnormal constitutional condition. In thirty-five women with deformed pelves he found cretinism in four, anomalies of the skeleton in ten, small growth of the body in seven, anomalies of the internal and external genitalia in eleven, and struma in three. The causes of these anomalies may be operative in the germ or during intra-uterine or extra-uterine development.

The Cure of Chronic Peritonitis by Laparotomy.—HENOCH *Berliner klin. Wochenschr.*, July 13, 1891) presented to the Society of Physicians of the Charité, at Berlin, the case of a girl five years old, who, following a fall, developed considerable ascites. Not yielding to thrice-made puncture, laparotomy was performed. On opening the abdominal cavity, the peritoneum was found not only reddened and thickened, but covered with innumerable grayish-red miliary nodules. Carefully examined microscopically, the nodules presented nothing tuberculous in character. The child recovered perfectly.

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SATURDAY, AUGUST 29, 1891.

THE PROPER SPHERE OF THE OPTICIAN.

IT is but a few years since the province of the druggist was clearly outlined, and its delimitations, in contra-distinction to that of the physician, sharply determined. A little further back in history it was found that the barber and the surgeon had functions that very properly required differentiation. When the barber was restricted to his proper field of action by other barbers that had become or had determined to become surgeons, there was doubtless much bitterness of heart and outcries against the injustice on the part of those that kept as their sign the red-banded post. In the same way, when the apothecary, if he would continue to practise medicine, was compelled to obtain a medical instead of only a pharmacological education, he doubtless also thought himself aggrieved. In both cases the world in general and each of the four professions in particular, is finally the better off. No druggist of character would wish the old days back.

Another great stride in the march of medical progress must soon be taken, and when it is resolutely done the world will be by far the better. The optician, *quâ* optician, must be forbidden to prescribe spectacles. It should be as illegal for an optician to prescribe glasses as it is for a pharmacist to prescribe morphine or arsenic. Both the optical instrument and the drug are medicinal agents, and only a physician is fitted to judge of the propriety of their use. It is a common error prevalent in the community, and one that some few ignorant opticians have accepted, that the prescription of spectacle lenses is a purely optical, physical, or mechanical process. This is a most grievous mistake, and one that is costing thousands of innocent people their happiness, health and vision.

Every pair of glasses worn has a medical significance, and every case of refraction resolves itself into a question of physiology, pathology and pathogeny. The merely physico-optical part is but the simple alphabet of the matter—the most primary rudiments of the therapeutics of ocular, and of ocularly originating neurological affections. A few considerations may help toward an apprehension and acknowledgment of this great truth:

1. The eye is a living, not a dead, camera-obscura, and the simple mechanico-optic laws will apply to it only in a subordinate and very limited sense. The purely optical laws must be used by a physician, by a living intelligence, in accordance with manifold and changing circumstances and ever-varying function. Even when no disease exists other than ametropia and ametropically-caused conditions, there are physiology, life, occupation, hereditary factors, anisometropia, and a possible multitude of dyscrasiæ, of which only a physician can judge.

2. It is admitted that when the optician suspects disease he should refer the patient to the physician. The admission is death to the contention. Only a physician *can* suspect many diseases of the eye, or diseases caused by ocular abnormality. The proof of this lies in the horrible fact always turning up with mournful regularity at the oculist's office—the fact of ruined eyes because the opticians have *not* suspected. Glaucoma *cannot* be suspected except by one who has studied glaucoma—*i. e.*, by a physician. Glaucoma *is not* suspected by the optician, and while he is trying to find a glass for the eye the eye is ruined. Choroidal, retinal, and optic-nerve diseases of a hundred kinds cannot be suspected by the optician, and while he is pottering with glasses blindness overcomes the patient. The horde of reflex neuroses of ocular origin cannot be known by the optician, and their causes cannot be stopped by means of any purely optical knowledge.

3. Ametropia in persons under forty-five years of age (and often in those from forty-five to fifty-

five) cannot be accurately diagnosticated except by the use of a mydriatic, and a mydriatic should never be used, and even now cannot legally be used except by a physician. Ophthalmologists are in thorough accord that refraction without paralyzed accommodation is mere guess-work, and is not scientific. It is the small degrees and the unsymmetrical axes of astigmatism, the so-called spasms of accommodation, the relations of ametropia and heterophoria, the existence of anisometropia, the tendency to progressive myopia, etc., that, uncorrected, are breeding a host of ills in the hyperesthetic and ocularly overworked urban resident, and these are facts that can be diagnosticated and proceeded against solely by a *medically* educated mind.

4. As a last resort the optician claims the presbyope as his own. This claim must also be denied. The reasons for the denial are patent. Only a physician can say when the presbyopic process is complete. Some power of accommodation often persists up to fifty or sixty, and even a greater age, and may always be the exciting cause of pathologic reflexes. But most important is the fact that it is in the presbyope that glaucoma and cataract arise—glaucoma in which the loss of a day may mean blindness, cataract that requires constant medical watchfulness and medical advice to prevent many evil results.

Many other reasons of a like kind will arise spontaneously in the mind of the student of the living eye, or will be forced upon those that yield ungraciously to the growing need. It is but fatuous self-deception to charge the medical specialist with avarice or with jealousy of the optician; it is only struggling against the inevitable to attempt keeping the two professions longer united. The prescription of glasses is one sort of work, the scientific and artistic filling the prescription is another kind of work. There is not the most far-away tendency of the physician to belittle the function of the optician. The physician in many ways is greatly dependent upon the optician, and is helped by him to realize the common aim—the good of the patient. The two professions must work in harmony, and this can never be so long as their respective spheres are not delimited.

The greatest enemy of the optical profession is he that contends that opticians are capable of prescribing spectacles. The blunders that the optician is repeatedly making, and, since he is not a physician, must necessarily make in attempting to prescribe, are bringing upon him the increased contempt both of the physician and the public. If the optician *could* prescribe without grievous mistakes, the opposition of all the physicians in the world would not and should not change the common custom or affect the optician's reputation. The only way to elevate the optical profession is to restrict the optician's field of action to such work as he can do rightly and well. The scientific manufacture and the artistic fitting of a perfect pair of glasses according to the prescription of the physician is an art requiring high qualities of mind and skill, and, when it comes to be estimated at its proper therapeutic value, will command increasingly more and more respect.

It is wretched ethics and very far from our aim to encourage malpractice suits, but such suits often correct and open the eyes of the community to existing wrongs. One of the greatest advances in medico-legal progress, fraught with incalculable good to humanity, consists in the decision of the French courts, that it is illegal for an optician to prescribe glasses or give advice for any visual trouble. This has been called "a narrow technical theory," but by none who understands a tithe of the evils daily resulting from the non-existence of such a law in the United States.

SIMPLICITY AND INDEPENDENCE IN PRESCRIPTION-WRITING.

IN this day of extensive knowledge of drugs and of their physiological actions there is a great tendency to complexity of prescription. Impatient or dissatisfied with the slowness or uncertainty of action of a single remedy, the therapeutist is tempted to devise formulæ that will answer many and varied purposes. In this he is encouraged by the unfortunate practice of introducing into text-books formulæ the memorizing of which the student deludes himself into believing is the essence of therapeutics. He would be better taught if, instead, he were shown that the most effective treatment depends upon a knowledge of disease and of the action of individual drugs.

A drug should be prescribed for the effects that it will produce. Given alone, in this way, its action can be best studied. Experimental therapeutics in the lower animals has only a relative value, to be confirmed or modified by observation in man. There can be no objection to the intelligent combination of a number of remedies in a single prescrip-

tion; but they should be rationally combined, from a knowledge of their therapeutic effects, to accomplish definite results that it is known can only be obtained by such combination. The danger consists in the indiscriminate and routine use of such formulæ, as a result of which prescription-writing becomes merely mechanical, while the isolated action of a remedy escapes observation, and the lesson that every case should teach is lost.

Sometimes, of course, drugs are prescribed when drugs are not required. The mere existence of a valvular lesion of the heart or of derangement of the gastro-intestinal apparatus does not, by any means, indicate the administration of medicaments. The physician owes it to himself and to his patient not to prescribe unnecessarily. He has no more right to deceive or pretend under such circumstances than under any other.

To be successful, a therapeutist, besides being observant and conscientious, must be intelligent, original, independent, and have a distinct purpose in view. The prescriptions of such an one will always be simple, spontaneous, rational, and adapted to the individual case. To him ready-made formulæ are as obnoxious as they are unscientific.

INFLUENZA AND ITS COMPLICATIONS.

Though we are not at present cognizant of the ultimate cause of influenza, the evidence is sufficient and of such a character as to warrant the assumption of its toxemic nature; and the next step in this line of thought is to refer the etiology of the disease to microbic influence. Its epidemic occurrence, its transmission along lines of travel, its fatality among the debilitated, its peculiar symptomatology and its disastrous complications, all point to an infectious agency of origin.

Of the group of infectious diseases there is none to which influenza bears perhaps a more striking analogy than to diphtheria. Both occasion profound depression, from which recovery is tedious and tardy. Both are followed by the evidences of polyneuritis, especially manifest in the ocular and peripheral palsies, in the neuralgias, in the abolition of the reflexes, in the trophic changes that take place. In both are cerebral symptoms observed. One other manifestation—or rather group of manifestations—do these two diseases present in common, that is, those referable to the heart—a complex of symptoms that may be ascribed to inflammation of the vagus. The action of the heart is at first slowed, then accelerated and irregular; ultimately death may ensue from heart-failure, a result of degeneration of the cardiac muscle. In the recent epidemic this manifestation of cardiac deficiency was especially noticeable, and to it is the fatal result in not a few cases to be ascribed. The profound alterations in nerve and nutrition also afford sufficient explanation for the protracted convalescence and the long-deferred and oft imperfect recovery.

THE PATENT MEDICINE SUBSTITUTION BUSINESS.

"No one like a thief to catch a thief" is an old motto and one that is being illustrated in the proprietary medicine business. The nostrum-venders must now fight their imitators, and it is to be hoped that in this piratical and parasitical rough-and-tumble the public may become disgusted with the whole crew. Millionnaire patent-medicine venders are becoming as common as ward politicians, and no one will feel sorry that they must take some of their own medicine. It seems that almost every secret compound now has many imitations, and that there are a number of large manufacturers whose sole business it is to make these counterfeits. The standard article is imitated in originals, in qualities, appearance, name, and appearance of the packages, as nearly as it is possible or safe. Druggists buy these counterfeits and use their own printed wrappers to give them a personal guarantee of value and private manufacture. Whenever an imitation attains any considerable popularity it is probable that it will find imitations. And thus is again illustrated the old saw:

> These little fleas that do me tease
> Have lesser fleas that bite 'em,
> And these again have lesser fleas,
> And so *ad infinitum!*

THE HOT SPRINGS DISGRACE.

The excellent *Journal of the State Medical Society of Arkansas* very justly and courteously sets us right concerning the fiendish doctors and their drummers at Hot Springs. It is indeed a serious matter, and our banter was far from being meant as reproach to those that have heroically tried to make head against the disgusting abuse. Our own withers are far from being unwrung. It appears that the city, county, and State authorities have vainly tried to break up the practice, the licensing

and ticketing the drummers with badges being the last attempt to make these wretches odious. The bottomlessness of human shamelessness has frustrated all such attempts, and the execrable business still goes on. Our contemporary has our sympathy, and for the very evident reason that East and West alike—the whole profession, indeed—must willy-nilly share in the disgrace.

SOCIETY PROCEEDINGS.

SECOND CONGRESS OF TUBERCULOSIS.

Held in Paris from July 27 to August 2, 1891.

(Continued from p 199.)

AT the second session the subject of "The Identity of Human Tuberculosis with Tuberculosis of Fowl, of Cattle, and of Other Animals" was taken up.

M. CHAUVEAU presented a communication upon "The Identity of Human Tuberculosis and that of the Ox: an Experimental Study based upon Inoculation of Cows with Tuberculous Products obtained from Human Subjects." In his experiments with the products of tuberculosis in man M. Chauveau had been struck by the apparent identity of tuberculosis in different animals. He endeavored, particularly, to infect cattle with the products of human tuberculosis, so as to determine whether or not bovine tuberculosis would result. These experiments were conducted upon three lines: The ingestion of tuberculous matters, intra-venous injection, and subcutaneous introduction.

Infected food was administered to three young animals: one six months old, another eleven months, and the third one older.

The first was given a small quantity of a mass made with fragments of lungs obtained from a patient who died from acute miliary tuberculosis. This animal became tuberculous, as did a control-animal to which were given the products of bovine tuberculosis in the same manner. The lesions were confined to the digestive tract, consisting of a confluent eruption of tuberculous granulations on the peritoneum and small intestine; the liver also presented a few well-developed tuberculous granulations, while the respiratory and grandular apparatus were free from lesions.

The second animal also was given a mass composed of a fragment of lung from a case of miliary tuberculosis, to which was added a fragment of lung obtained from a case of caseous pneumonia. In this animal the lesions were limited to the respiratory apparatus, no lesions being found in the intestine or abdominal viscera; the lung presented a certain number of caseous masses, and the mediastinal glands were involved.

The third animal was given a mass made from a piece of lung from a case of caseous pneumonia. The resulting lesions were situated in both the digestive and respiratory apparatus; there existed a confluent tuberculous eruption on both the small intestine and peritoneum, while the rennet presented a lenticular eruption that had already reached the ulcerative stage; in the respiratory apparatus a fine eruption had begun to appear in the larynx, and was extending into the smallest bronchial ramifications.

The second series of experiments was intended to demonstrate the transmission of human tuberculosis to the ox by means of intra-venous injections. An emulsion was made with a piece of lung obtained from a young man who had died from acute tuberculosis. This was injected into the jugular vein of a three-months-old calf. The animal was killed on the twenty-ninth day, and at the post-mortem examination the bronchial glands were found tuberculous, while in the lungs granulations were present; these same lesions were found in a control-animal that received bovine virus in the same way. In a third series the subcutaneous method was employed. A mixture of tuberculous matter containing no solid particles was made with material obtained from a case of tuberculous arthritis. Injections were made in the subcutaneous tissue; in each instance a tuberculous tumor was obtained. A few hours after the injection has been made, a slight swelling appears at the site of injection; then follows a period of latency, succeeded in turn by an irritative process, resulting in tumefaction that does not disappear; this is the tuberculous tumor. In all such cases the nearest lymph-gland became swollen; in no case did the tuberculosis generalize itself, the nearest lymph-gland apparently arresting the process.

As a result of his experiments, M. Chauveau believes that the tuberculosis of man is absolutely identical with that of the ox.

M. VIGNAL next presented a communication on "The Non-identity of Human Tuberculosis and that of Birds." The experiments were made with a view to confirm the statements made a few years ago by MM. Nocard and Roux, that the bacillus of bird-tuberculosis was but an attenuated form of the bacillus of human tuberculosis. The experiments of M. Vignal were made to determine whether Koch's bacillus by passing through several cultures would not lose its virulence and become more like that of bird-tuberculosis. With this end in view, on the 4th of March a pheasant was inoculated with sputa obtained from a tuberculous patient. A guinea-pig that at the same time received a certain quantity of the preparation died very rapidly, demonstrating the virulence of the material used. The pheasant was living two months after the operation. Then the same pheasant was again inoculated with tuberculous virus, as was also a guinea-pig; the latter died, while the pheasant remained well. A third inoculation of tuberculous matter was made, and again the control guinea-pig died, while the pheasant remained well.

PROF. STRAUS and DR. GAMALEIA next presented a communication on "The Differential Characters of Human and Bird Tubercle Bacilli." The first character that differentiates these two bacilli is the appearance of the culture on a solid medium—cultures from human tuberculosis being dry, nodular, scaly and hard, while bird-tubercle cultures are unctuous, soft, and moist. Again, the bacilli differ in their pathogenicity, certain animals being susceptible to one culture and refractory to the other. Hens are refractory to human tuberculosis, while they readily die from bird-tuberculosis; while the contrary is the case with the dog. The rabbit and guinea-pig are susceptible to the action of both bacilli, but in

different ways. Guinea-pigs inoculated with human tuberculosis die, the viscera presenting apparent tubercles; while inoculations of the bird-bacillus will kill these same animals, but without leaving any macroscopic signs of the disease in the internal organs.

Straus and Gamaleia have also found that these two bacilli invariably preserve their peculiar properties and their special pathogenicity independently of the culture-medium employed. They endeavored by certain means to modify the two bacilli. The products of tuberculosis in birds were introduced beneath the skin, into the peritoneal cavity, and into the veins of rabbits and guinea-pigs, which died with tubercles in many organs. Fragments of these organs were introduced into a second series of guinea-pigs and rabbits, which in turn died, showing tuberculous lesions, especially in the lungs in guinea-pigs and in the liver in rabbits. In the third and fourth series, however, even when these animals died, their organs contained no tubercles nor any bacilli.

These investigators have not succeeded in permanently domesticating the bird-bacilli in the rabbit and guinea-pig, still less in developing from it the bacillus of human tuberculosis. They have also endeavored to determine whether it were possible to vaccinate the dog against human tuberculosis by frequently inoculating him with bird-tuberculosis. Several dogs experimented upon for months received intra-venous injections of the bacilli of bird-tuberculosis; but when they were subsequently subjected to an intra-venous or intra-peritoneal injection of the bacilli of human tuberculosis they all died with the same lesions presented by a control-animal. As an outcome of their experiments, Straus and Gamaleia are led to believe in the non-identity of bird-tuberculosis and the tuberculosis of man.

MM. CADIOT, GILBERT, and ROGER presented a paper on "Human and Bird-Tuberculosis." They first described the appearance of bird-tuberculosis, and stated that it presented itself as caseous masses and granulations, more or less extensive and occupying the liver, spleen, and peritoneum—the intestines presenting ulceration, and in this case the evacuations containing bacilli, thus explaining the mode of infection in, and the origin of, certain epidemics. In hens tubercles are histologically constituted of a mass of epithelioid cells, the central portion of which becomes vitreous; while in pheasants these epithelioid cells are surrounded by connective tissue that undergoes amyloid degeneration; in all these lesions the bacilli present the same appearance and the same reactions to stains as do those of human tuberculosis.

Cadiot, Gilbert, and Roger have also experimented to determine the relation between the tuberculosis of birds and that of mammals. Two series of experiments were conducted. In the first bird-tuberculosis was studied. The virus of bird-tuberculosis injected into the veins and peritoneum of hens produced lesions similar to spontaneous or primary tuberculosis; the same virus injected into the peritoneum of rabbits resulted in a general eruption of visceral tuberculous granulations; the same injections made into guinea-pigs afforded variable results. Twenty-four guinea-pigs each received a peritoneal injection; thirteen presented no appreciable lesion; in seven localized visceral granulations were found; in each of five a caseous abscess was found at the inoculation-point.

In another series two guinea-pigs were inoculated with virus obtained from a case of pheasant-tuberculosis. In both, generalized tuberculosis resulted, the tuberculous products of which were inoculated into another series of guinea-pigs, and this was repeated until the tuberculous products had passed through three series of animals, when it was found that this bird-tuberculosis, by passing through three series of mammals, had lost the specific properties of bird-tuberculosis, and was no longer destructive to birds.

In the second group of experiments forty hens were inoculated with human tuberculous virus and none died; two were still living; while of the remaining thirty-eight, which were killed, thirty-three presented no lesion at autopsy, while in the remaining five, small, transparent, tuberculous granulations were found, evidently identical with human tubercles, as they induced disease in guinea-pigs; in another case, the virus was so much transformed that its inoculation into another hen resulted in disease.

MM. COURMONT and DOR, of Lyons, read a communication on "Bird-Tuberculosis," discussing the probability of its bacillus being only a variety of the bacillus of human tuberculosis. They conducted two sets of experiments. On the one hand, they inoculated hens with mammalian tuberculosis by the subcutaneous method and also by the digestive tract; while on the other hand, rabbits and guinea-pigs were inoculated with bird-tuberculosis. The conclusions arrived at are: that the hen is not absolutely refractory to human tuberculosis; and that inoculation by the digestive tract is much less certain than inoculation by the subcutaneous method; also that the bacillus of human tuberculosis can be propagated in hens by subcutaneous inoculations. Courmont and Dor also believe that when bird-tuberculosis has lost its special influence or character by passing through mammals, it retains the faculty of producing general tuberculosis in the rabbit; but this same virus after a single passage through a hen loses all its peculiar properties toward mammals.

DR. HÉRICOURT, of Paris, related that he had treated 56 cases of tuberculosis with injections of the serum of dogs' blood. He divided his observations into two groups: one included those who had reached the third stage of the disease; in these the treatment had no influence whatever; in the second group, composed of cases of tuberculosis in the second stage, advanced bone-tuberculosis, facial lupus, etc., a remarkable change had taken place, manifested by improvement in the digestion and diminution in the number of bacilli in the sputum, while an absolute cure was only observed in cases at the very beginning of the disease, when no bacilli could be found in the sputa.

DR. LANDOUZY presented a communication on "Tuberculosis of Newborn Children." In the category of newborn, Dr. Landouzy included all children between one day and two years old. He maintained that deaths from tuberculosis constitute a large part of the mortality in the newborn, as shown by the statistics of the Tenon Hospital in Paris—statistics the data of which have been verified by autopsy. Dr. Landouzy insisted that the community ought to be taught the ease with which children are infected with tuberculosis, especially by the digestive tract, even when not predisposed by heredity.

PROF. SEMMOLA, of Naples, read a paper on "The Treatment of Pulmonary Tuberculosis by the Combined Action of Iodoform and Injections of the Serum of Dogs' Blood." He stated that during the preceding eleven years he had obtained good results from the administration of small, frequently repeated doses of iodoform, given by the mouth. For several months he had employed the method of injection of the serum of dogs' blood recommended by MM. Richet and Héricourt, with such favorable results as to encourage him to continue the method, at the same time combining it with the internal administration of iodoform in small, frequently-repeated doses.

DR. VIGNAL next read a paper on the "Heredity of Tuberculosis," being the outcome of laboratory experiments. These experiments were conducted as follows: a number of guinea-pigs were inoculated with fragments of fetal organs or of organs taken from newborn animals the mothers of which were definitely tuberculous.

A second group of guinea-pigs was inoculated with fragments of placenta, macerated, as in the first instance, in a ¾ per cent. salt solution; while a third group was given injections of sputum and fragments of organs obtained from the mothers.

The results were negative as to the transmission of tuberculosis from the mother to the fetus; for, while all the guinea-pigs that received fragments of sputa and organs from tuberculous mothers became tuberculous and died, twenty-four guinea-pigs inoculated with organs obtained from children born of tuberculous mothers and eighteen guinea-pigs that had been inoculated with fragments of placenta remained normal.

In another series of experiments an effort was made to ascertain whether tuberculosis could be directly transmitted to the fetus by the mother. For this purpose an injection of Koch's bacillus was made into the peritoneum of five pregnant guinea-pigs. The liver and spleen obtained from the products of conception were inoculated into nineteen other guinea-pigs, all of which remained non-tuberculous. Several that were killed five months later presented not the slightest trace of tuberculosis. Vignal concludes that instead of being frequent, tuberculous heredity, on the contrary, seems to be very rare.

DR. HUTINEL, of Paris, in connection with the same question, stated that, according to his experience, congenital tuberculosis is very rare; for out of a series of 252 autopsies on children, in only 8 had he found tuberculous lesions, the age in three varying from five to six and seven months, the youngest being forty-one days old, and in none does he feel justified in stating that the tuberculosis was congenital. In the second year, however, he finds that one-third of the children dying present tuberculous lesions, and that this propertion increases still more in the third and fourth year.

Another argument in favor of the tuberculosis not being congenital is that of 18,000 newborn city children who are annually sent to the country through the care of public charitable institutions, not more than 20 tuberculous children have ever been met.

The conclusion to be drawn is that all children born of tuberculous parents are not tuberculous, but constitute subjects favorable for the development of this constitutional disease.

DR. BERNHEIM presented the following conclusions: That there is no such thing in tuberculosis as heredity of the tuberculous germ, and that the predisposition to the development of tuberculosis is not greater in the offspring of tuberculous parents than in those born of individuals suffering with any other constitutional disease; finally, that *tuberculosis is always transmitted by contagion.*

DR. JACOBI, of New York, stated that he was the first, over twenty years before, to present a case of congenital tuberculosis.

DR. KIRMISSON read a paper on "The Treatment of Tuberculous Peritonitis by Means of Injections of the Serum of Dogs' Blood." The patient was a girl, three years old, with ascites, for the relief of which puncture was performed. The liquid again accumulating, laparotomy was resorted to. A large number of tuberculous granulations were found all over the visceral and parietal layers of the peritoneum. After carefully washing out the peritoneal cavity, the abdomen was closed, but a few days later the liquid had again collected. Dr. Kirmisson then proceeded to make injections of the serum of dogs' blood. Soon after, all induration of the abdomen and the ascites completely disappeared.

DR. PINARD also read a communication on "The Treatment of Weak Newly-born Children with Injections of the Serum of Dogs' Blood." Two children, both born before term, of mothers who had reached the last stage of the tuberculosis, and who died soon after confinement, were given injections of the serum of dogs' blood with great benefit. Encouraged by the favorable results obtained, Pinard made injections of the serum of dogs' blood in all children that from whatever cause weighed less than four pounds. In seventeen children the results were so satisfactory as to have stimulated Dr. Pinard to employ this method in all instances in which a considerable weakness is present at birth.

DR. BERTIN, of Nantes, insists that the goat is refractory to spontaneous tuberculosis, and that the economy of this animal contains a substance that is a protective against tuberculosis.

DR. BERNHEIM stated that of forty-eight goats on which he had performed autopsies he had found tuberculous lesions in none, and that he had never been successful in inoculating a goat with tuberculosis.

(*To be continued.*)

CORRESPONDENCE.

THE POWER OF WILL IN DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: On reading your editorial on "The Power of Will in Disease," in THE MEDICAL NEWS of June 27th, a case came to my mind that may be cited in illustration of the correctness of your remarks.

While I was resident house-physician in the German Hospital in London, a girl, about twenty-two years old, came to the out-patient department, accompanied by her mother and walking with much difficulty on crutches. She stated that she was unable to stand without support, not to mention walking; that this condition had existed for a long time, for months if not for years, and that she had gone the rounds of pretty nearly all the London hospitals without deriving any benefit. Her condition,

in fact, was continually becoming worse. At first sight I judged the case to be one of hysterical paraplegia and told the girl to wait until I had disposed of the other patients, when I would examine her case more thoroughly. After the other patients had been attended to, I made a few necessary inquiries and examined the feet and legs, and was convinced that my diagnosis was correct. I thereupon applied the faradic current to each leg for a few minutes, prescribed some embrocation (the nature of which I have entirely forgotten), and told the girl to report in a fortnight.

When she returned she came without crutches, walking with perfect ease, and exceedingly happy and grateful for the improvement. I have not heard of her since, having left the hospital some years ago, but as this occurred about three-quarters of a year before I left, I presume that the cure lasted at least that long, as she would otherwise probably have returned, having been so much benefited the first time.

As an epicrisis to this note I should like to offer the following: This case had, no doubt, been correctly diagnosticated at the other hospitals, but had possibly not received the necessary *sympathy* at the hands of the physicians; for we all know what a *crux medicorum* hysteria often proves. Then some good friend may have told the girl to try the German Hospital; that the physicians there were very clever people. Probably favorably prepossessed she came, and on finding that she received more attention than had been given her in the other over-crowded places, possibly with a lot of students worrying over the cases, she conceived the idea that her disease could be cured, and the successful termination was, in fact, the direct outcome of her own (subjective) conviction. I am, etc.,

F. A. Philippi, M.D.

Nieheim, Westphalia.

TYPHOID FEVER AND INSANITY.

To the Editor of The Medical News,

Sir: The recent reports in The Medical News by Dr. E. E. Graham and Professor H. A. Hare of cases of typhoid fever complicated by insanity are certainly of great interest.

There is, however, a criticism which I wish to make for the sake of accuracy.

Mercier (*Sanity and Insanity*, p. 140) says: "There are only two causes of insanity—*heredity* and *stress*." This broad definition, it seems to me, entirely covers the ground. Everyone has more or less tendency, on account of heredity, to become insane. The greater this tendency, the less the stress of outer circumstances will there be required to produce insanity, and *vice versa*.

Cases have been reported by Wood, Osler, and others in which insanity has developed in the course of or during convalescence from typhoid or other fevers and also after injuries and surgical operations. The operative causes producing insanity, common to all these physical processes and conditions, are malnutrition, exhaustion and irritation of the cerebral structure. Now, ordinarily the cerebral disturbance induced by these physical ailments does not provoke insanity, because there is not sufficient cerebral instability. But let a person with an exceedingly unstable nervous organization be attacked with dysentery, typhoid fever or pneumonia; then insanity will be apt to develop as a complication or a sequel. This insanity will, in all likelihood, be of that *form* to which the person is predisposed.

In Dr. Graham's case, for instance, it is very probable that a severe surgical operation, an attack of one of the severe fevers (other than typhoid), or any great emotional disturbance would have induced insanity. The heredity existed. The fever was sufficient stress.

In a certain sense, it must be admitted that it is correct to speak of insanity as a complication or a sequel of any of these physical processes. But I would call attention to and emphasize the fact that when insanity occurs in this connection, these various physical diseases simply act as the exciting causes. It would therefore be also entirely correct to speak of typhoid fever as the exciting or determining cause of insanity, or to say that insanity was induced by typhoid fever.

Theodore Diller.

KNIFE-BLADE IN THE BRAIN.

To the Editor of The Medical News,

Sir: The report in The Medical News of July 25th of a remarkable case in which a knife-blade was carried in the brain for years after its entrance, recalls a peculiar and somewhat similar case presented to the class of medical students in the University of Louisville in the winter of 1849–50, at the medical clinics of Prof. Elisha Bartlett, at the Louisville City Hospital. A man was brought into the medical wards for an undiagnosticated brain-trouble. He appeared insane, could give no history of himself, did not make any complaint, nor, as I remember, did he talk at all.

The cerebral disturbance was evident enough, but its cause could not be determined. Examination of the body revealed many scars (principally over the chest) which appeared to have been a result of knife-stabs and cuts. There was also above the external angle of the left eye a festered spot, so small that it was not regarded as of any significance.

In the course of a few weeks the man died. On post-mortem examination a piece of a dirk knife blade from two to three inches long, I think, was found in the left anterior lobe of the brain, having penetrated the orbital process of the frontal bone and having been broken off, entering in at the festered spot, which proved to be the orifice of a sinus communicating with a deep abscess formed around the blade of the knife in the brain. How long the knife-blade occupied this situation could not be stated, but supposing that the injury was inflicted at the same time as that to which the scars were due, it must have been some months, as the cicatrices appeared to be old.

I do not know if this case was ever published and I write exclusively from memory; my record may not be exact, but the history in more perfect form ought to be found in the old records of the Louisville City Hospital.

Very respectfully, Virgil McDavitt, M.D.

Quincy, Ill.

DuBois-Reymond, of Berlin, has been awarded the Gold Medal of Science.

NEWS ITEMS.

The Association of American Physicians will hold its sixth annual meeting, in connection with the second Congress of American Physicians and Surgeons, at Washington, D. C., September 22, 23, 24 and 25, 1891.

The following program has been formulated:

TUESDAY, SEPTEMBER 22D.

Session of the Association, 10 A.M.

President's Address, by Dr. William Pepper, of Philadelphia.

General business, reports, etc.

Discussion on the Treatment of Visceral Tuberculosis by Koch's Method. Reports by Dr. F. P. Kinnicutt, of New York; Dr. Harold C. Ernst, of Boston; Dr. William Osler, of Baltimore; Dr. J. H. Musser and Dr. J. P. C. Griffith, of Philadelphia.

The Climate of Southern California for Respiratory Diseases: a Preliminary Paper, by Dr. Norman Bridge, of Los Angeles.

Experimental Studies on the Causes of the Localization of Pulmonary Phthisis and certain other Infectious Diseases in the Lungs, by Dr. J. W. Roosevelt, of New York.

Session of the Congress, 3 P.M.

Conditions Underlying the Infection of Wounds, including a Discussion of Disinfection with reference to the Treatment of Wounds, of the Relation of Bacteria to Suppuration, of the Resistance of Tissues to the Multiplication of Bacteria, and of the Effects of Antiseptic Agents on Wounds. *Referee*, Dr. William H. Welch, of Baltimore. *Co referee*, Dr. Roswell Park, of Buffalo.

The discussion will be adjourned, if necessary, until Friday afternoon.

WEDNESDAY, SEPTEMBER 23D.

Session of the Association, 10 A M.

Discussion on the Remote Results of the Removal of the Ovaries and Tubes. *Referee*, Dr. William T. Lusk, of New York. *Co-referee*, Dr. Wharton Sinkler, of Philadelphia.

Nerve-stretching in Inveterate Cases of Trigeminal Neuralgia, by Dr. James Stewart, of Montreal.

On the Diseases of the Kidney, popularly called "Bright's Disease," by Dr. F. Delafield, of New York.

Note on the Recognition of Certain Cases of Epilepsy, accompanied by Albuminuria, which might be mistaken for Cases of Uremic Convulsions, by Dr. James Tyson, of Philadelphia.

Bradycardia in Acute Articular Rheumatism, by Dr. I. E. Atkinson, of Baltimore.

Session of the Congress, 3 P.M.

The Late Manifestations of Syphilis. *Referee*, Dr. Phineas S. Conner, of Cincinnati. *Co-referee*, Dr. Abner Post, of Boston.

The President's Address will be delivered in the Lecture Hall of the National Museum at 8 P.M., and will be followed by the reception of the President from 9.30 to 12 P.M.

THURSDAY, SEPTEMBER 24TH.

Session of the Association, 10 A.M.

Discussion on the Relations between Arterial Disease and Visceral Changes. *Referee*, Dr. George L. Peabody, of New York. *Co-referee*, Dr. W. T. Councilman, of Baltimore.

Intestinal Perforation in Typhoid Fever, by Dr. R. H. Fitz, of Boston.

The Relation of Drinking-water to Disease, by Dr. Henry P. Walcott, of Cambridge.

A Contribution to the Pathology of Pernicious Anemia, by Dr. J. P. Crozer Griffith and Dr. Charles W. Burr, of Philadelphia.

On Changes in the Red Blood-corpuscles in the Pernicious Anemia of Texas Cattle Fever, (by invitation) by Dr. Theobald Smith, of Washington.

Session of the Congress, 3 P.M.

Fibroid Processes (Chronic Interstitial-Inflammation Scleroses): Their Pathology and Etiology, with Special Reference to the Influence of Diathesis and Heredity. *Referee*, Dr. A. L. Loomis, of New York City. *Co-referee*, Dr. William Osler, of Baltimore.

Dinner, conjointly with the American Surgical Association, in honor of foreign guests, at the Arlington Hotel, at 8 P.M.

FRIDAY, SEPTEMBER 25TH.

Session of the Association, 10 A. M.

The Condition and Prospects of the Library of the Surgeon-General's Office, and its Index Catalogue, by Dr. John S. Billings, of Washington.

Sequel to a Case of Slow Pulse (Purdy), by Dr. D. W. Prentiss, of Washington.

Report of Autopsy, by Dr. Robert T. Edes, of Washington.

Grave Forms of Purpura Hemorrhagica, by Dr. J. H. Musser, of Philadelphia.

Pathological Histology of Acute and Chronic Appendicitis, by Dr. William F. Whitney, of Boston.

The Treatment of Typhoid Fever by Systematic Cold Bathing, by Dr. James C. Wilson, of Philadelphia.

Concluding business.

Session of the Congress, 3 P.M.

If necessary, the discussion on the "Conditions Underlying the Infection of Wounds," etc., will be resumed.

Drs. James G. Glover and William M. Ord, of London; Drs. McCall Anderson and W. T. Gairdner, of Glasgow; Dr. J. Battey Tuke, of Edinburgh; Professor Curschman, of Leipsic; Professor Kühne, of Heidelberg; and Dr. Löwenberg, of Paris, have already accepted the invitation of the Association to attend the Congress, and will be the guests of the Association, participating in the discussions of the papers read before it.

The Association will hold its meeting in Hall No. 1 of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and in the Main Hall of the same building the meetings of the Congress will be held.

Members of this Association are *ipso facto* members of the Congress, and as such are expected to register. Parlors 1 and 2 in the Arlington Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. The registration fee is five dollars.

A copy of the Transactions of the Congress will be sent to each person who may register, and only those who

may register, invited guests, and ladies accompanying them, will be admitted to the reception of the President.

Dr. Samuel C. Busey is the representative of the Association on the Committee of Arrangements, of which he is Chairman.

The American Gynecological Society will hold its sixteenth annual meeting at Washington, D. C., on September 22, 23, and 24, 1891. The following program has been arranged:

Tuesday, September 22d. Address of Welcome; by Dr. Joseph Taber Johnson, of Washington.

The Advantages of Mixed Anesthesia in Gynecological Surgery; by Dr. John C. Reeve, of Dayton, O.

Concealed Accidental Hemorrhage during Labor; by Dr. Henry C. Coe, of New York.

Diffuse Adenoma of the Uterine Body; by Dr. James R. Chadwick, of Boston.

The Influence of Season on Recurrent Pelvic Inflammations; by Dr. Frank P. Foster, of New York.

The Therapeutic Aspect of Some Ovarian Disorders; by Dr. Edward W. Jenks, of Detroit.

Insanity following Laparotomy; by Dr. J. M. Baldy, of Philadelphia.

Vaginal Hysterectomy by Morcellement: Technique and Indications for Operation; by Dr. Samuel Pozzi, of Paris, France.

A Clinical Study of Primary Carcinomatous and Sarcomatous Neoplasms between the Layers of the Broad Ligament, with Report of Cases; by Dr. Joseph E. Janvrin, of New York.

The Present and Improving Status of Cæsarean Surgery; by Dr. Robert P. Harris, of Philadelphia.

Unique Case of Multiple Neuro-lipomata following Laparotomy; by Dr. H. Marion Sims, of New York.

Wednesday, September 23d. President's Address.

The Treatment of Cancer of the Cervix Uteri by High Amputation; Second Series of Cases, with Additional Report on the First Series; by Dr. William H. Baker, of Boston.

The Advantages of Delivery in the Left Lateral Posture; by Dr. Henry J. Garrigues, of New York.

The Influence of Imperfect Development as a Cause of Uterine Disease; by Dr. W. Gill Wylie, of New York.

The Technique of Vaginal Fixation of the Stump in Abdominal Hysterectomy; by Dr. Henry T. Byford, of Chicago.

Can we Avoid Mural Abscesses and Ventral Herniæ after Laparotomy? by Dr. Horace T. Hanks, of New York.

Some Clinical Testimony as to the Ultimate Results of Removal of the Uterine Appendages; by Dr. Thaddeus A. Reamy, of Cincinnati.

Indications for Abdominal Section in the Treatment of Puerperal Pelvic Inflammations; by Dr. R. B. Maury, of Memphis, Tenn.

A Study Relative to the Functions of the Reproductive Organs in American Indian Women; by Dr. Andrew F. Currier, of New York.

The Immediate Closure of Laceration of the Cervix; by Dr. Cornelius Kollock, of Cheraw, S. C.

The Conservative Treatment of Pelvic Tumors and Diseases; by Dr. Eugene Gehrung, of St. Louis.

The Anatomical Relations of the Lacerated Perineum to the Mechanics of its Causation; by Dr. Edward Reynolds, of Boston.

Thursday, September 24th. In Memoriam—Dr. Fordyce Barker; by Dr. James R. Chadwick, of Boston.

Ureteritis in the Female; by Dr. Matthew D. Mann, of Buffalo.

The Surgical Treatment of Retroversion and Prolapse of the Uterus; by Dr. Paul F. Mundé, of New York.

A Paper; by Dr. Theophilus Parvin, of Philadelphia.

Series of One Hundred Laparotomies; My Mistakes and Failures; by Dr. A. Palmer Dudley, of New York.

Laparotomy in Trendelenburg's Posture, with Exhibition of a New Operating-table; by Dr. Clement Cleveland, of New York.

The Electrical Treatment of Uterine Fibroids in England; by Dr. George Keith, of Brooklyn.

Diabetes Mellitus Gravidarum; by Dr. Henry D. Fry, of Washington.

A Successful Porro Operation; by Dr. R. Stansbury Sutton, of Pittsburg, Pa.

An Argument against the Stem-pessary, or so-called Drain-tube; by Dr. Egbert H. Grandin, of New York.

American Ophthalmological Society.—The twenty-seventh annual meeting of the American Ophthalmological Society will be held this year, beginning on Wednesday, the 23d of September, at the Arlington House, Washington, D. C.

Titles of the following papers to be read at the meeting have been received, and will take precedence on the bulletin:

Gouty Retinitis—Neuro-retinitis and Chorio-retinitis; History of Case of Brain Tumor with Autopsy; The Operative Treatment of Detachment of the Retina by Schöler's Method, with Report of Five Cases; by Dr. C. S. Bull.

The Use of Vaselin in Gonorrheal Conjunctivitis; by Dr. F. M. Wilson.

Case of Orbital Traumatism followed by Immediate Monocular Blindness due to Fracture of the Foramen Opticum; by Dr. P. A. Callan.

The Significance of Macular Changes in Advancing Myopia; by Dr. H. Derby.

Glaucoma after Extraction of Cataract; by Dr. F. Buller.

The Blind of New York City; by Dr. H. S. Oppenheimer.

Additional Experiments to Determine the Lesion in Quinine Blindness; A Case of Elephantiasis of the Eyelid; A Case of Acute Glaucoma occurring in an Eye with Coloboma of the Iris and Supernumerary Pupils (the first two papers illustrated by photo-micrographs and microscopic slides); by Dr. G. E. de Schweinitz.

A Clinical Study of the Ocular Symptoms found in the so-called Mongolian Type of Idiocy; by Dr. C. A. Oliver.

Extraction of Foreign Bodies from the Vitreous; by Dr. E. E. Holt.

Contributions to the Study of Heterophoria; by Dr. Swan M. Burnett.

Report of Cases of Cataract Extraction; by Dr. D. Webster.

Extraction of Foreign Bodies from the Interior of the Eyeball; by Dr. S. B. St. John.

A Partially Bony Growth of Orbit—Removal—Recovery; by Dr. B. L. Milliken.

Clinical Studies in Scotoma Scintillans; by Dr. D. De Beck.

Retinal Vessel Observations in Contusion of the Brain; by Dr. A. G. Heyl.

Ulcerative Keratitis in the Negro; Eye Complications in La Grippe; by Dr. J. A. Andrews.

Subnormal Accommodative Power in Young Persons a not infrequent Cause of Asthenopia; A Case of Successful Skin-grafting upon the Eyelid by Thiersch's Method; Supplementary Note to the Case of Useful Vision maintained by the Aid of a Totally Dislocated Lens, heretofore reported to the Society; by Dr. S. Theobald.

The Occurrence, Prevention, and Management of Prolapse of the Iris in Extraction of Cataract; Demonstration of a Roller Forceps for Pressing Out Trachomatous Granulations according to the Mangle Principle; by Dr. H. Knapp.

Recurrent Inflammation of Tenon's Capsule of both Eyes in connection with Mercurial Poisoning; Phlegmon of the Orbit in the Newborn; Gangrene of the Skin of both Lids in both Eyes; by Dr. C. J. Kipp.

On the Measurement of Simple and Compound Lenses; by Dr. L. Howe.

Routine Syringing-out of Cortical Matter in Cataract Extraction as Illustrated in 100 Cases; by Dr. J. A. Lippincott.

Two Cases of Intense Vertigo produced by an Attempted Correction of Astigmatic Refraction; by Dr. George Strawbridge.

The American Surgical Association will hold its annual meeting at Washington, D. C., September 22, 23, 24, and 25, 1891. The contemplated program includes discussions upon the following subjects:

Present Status of Brain-Surgery; by Dr. D. Hayes Agnew, of Philadelphia.

Report of the Committee on the Results which Should be Considered as Satisfactory, of Treatment of Fractures of the Shaft of the Femur; by Dr. Stephen Smith, of New York.

Conditions Underlying the Infection of Wounds: including a discussion of Disinfection with reference to Treatment of Wounds; of the Relation of Bacteria to Suppuration; of the Resistance of Tissues to the Multiplication of Bacteria; and of the Effects of Antiseptic Agents on Wounds.

Aseptic and Antiseptic Details in Operative Surgery; by Dr. A. G. Gerster, of New York.

Surgical Treatment of Injuries and Diseases of the Vertebral Column; by Dr. J. William White, of Philadelphia.

On Retro-peritoneal Abdominal Tumors, and Especially Those Involving the Kidney, by Dr. A. Vander Veer, of Albany, N. Y.

The Late Manifestations of Syphilis.

Recurrence of Cancer of the Breast; by Dr. Frederic S. Dennis, of New York.

The Treatment of Tuberculosis of Bones and Joints by Parenchymatous and Intra-articular Injections; by Dr. Nicholas Senn, of Milwaukee, Wis.

Fibroid Processes (Chronic Interstitial Inflammation, Scleroses): Their Pathology and Etiology, with Special Reference to the Influence of Diathesis and Heredity.

Treatment of Fractures Involving the Elbow-joint; by Dr. Lewis A. Stimson, of New York.

Fractures Involving Upper Third of Femur, Exclusive of Neck; by Dr. Oscar H. Allis, of Philadelphia.

Thoracic Surgery; by Dr. DeForrest Willard, of Philadelphia.

A Case of Diffuse Hypertrophy of the Breasts, with Photographs; by Dr. C. P. Porter, of Boston, Mass.

Fractures of the Bones which form the Elbow-joint, and their Treatment; by Dr. Levi C. Lane, of San Francisco, Cal.

Old Unreduced Luxations of Elbow; by Dr. Lewis A. Stimson, of New York.

The Study of a Case of Hemiplegia with Aphasia, following Ligature of Common Carotid Artery; by Dr. J. Ewing Mears, of Philadelphia.

Investigation of Pistol-shot Wounds of the Skull, and their Treatment; by Dr. E. H. Bradford, Boston, Massachusetts.

The Result of some Experiments in the Filling of Cavities in Bones following Operations for Caries; by Dr. E. H. Bradford, of Boston, Mass.

The American Otological Society will hold its twenty-fourth annual meeting, September 22, 1891, at Washington, D. C. Titles of the following papers to be read at the meeting have been announced:

Some Partially Successful Attempts to Promote the Healing of Old Perforations of the Tympanic Membrane; by Dr. S. Theobald.

An Unusual Form of Dislocation of the Malleus Handle; by Dr. S. Theobald.

Some Unusually Severe Cases of Mastoid Disease in Influenza; by Dr. H. Knapp.

Three Cases of Suppurative Otitis with Complications and One Death; by Dr. F. M. Wilson.

A Case of Suppuration, Exostosis, and Otitic Epilepsy—Trephining followed by Fatal Septic Meningitis; With a Consideration of Other Specimens, Illustrating the Avenues of Communication of Otitis to the Brain; by Dr. B. Alexander Randall.

Notes on the Use of the Leiter Coil in the Early Stage of Mastoid Disease; by Dr. Gorham Bacon.

A paper (title not yet announced); by Dr. C. J. Blake.

Acute Suppuration of the Middle Ear; Meningitis; death; autopsy; no involvement of the Temporal Bone; by Dr. J. M. Ray.

A Concluding Communication on the Anatomy of the Elephant's Ear; by Dr. Huntington Richards.

Membership in the American Medical Association is open to members of any State or local Medical Society entitled to send delegates to the Association who will send to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary in order to obtain membership. The weekly journal of the Association is forwarded regularly to members.

THE MEDICAL NEWS.

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VOL. LIX. SATURDAY, SEPTEMBER 5, 1891. NO. 10.

ORIGINAL ARTICLES.

REPORT OF FIVE SURGICAL CASES FOLLOWING GUNSHOT INJURY.

BY PAUL R. BROWN,
CAPTAIN AND ASSISTANT SURGEON IN THE UNITED STATES ARMY.

CASE I.—On May 7, 1886, I was ordered to Nogales, Arizona, to see Corporal E. S., who on May 3d, in the Sierra Pinita, Sonora, Mexico, had been shot in a skirmish with hostile Apaches. This man rode horseback eight miles on the same day, and on the day following he was carried in a wagon without springs a distance of twenty-eight miles. On the day of his removal, cold-water applications and a side splint were put on his thigh by Dr. Purdy, a civilian physician from Nogales. Except a few injections of morphine, he received no other treatment until my arrival in Nogales on the evening of May 7th. I found him in a room without any window, a door opening into the corridor being the only means of ventilation. I made a cursory examination of his wounds, but as he was suffering greatly, deferred my systematic examination until the following morning. The knee and foot were greatly swollen and inflamed. As he had a temperature of 104.8°, and was suffering for want of fresh air, I had his bed moved into an open shed, much to his comfort. Ice-water applications were placed upon his knee and foot, and I gave orders to have them constantly renewed during the night. On the morning of May 8th I made a careful examination of his wounds, and found that he had been hit by a bullet, caliber 45, that had entered the right knee-joint a little above the middle of the internal edge of the patella. The projectile passed through the internal condyle of the femur, then downward through the head of the tibia, and emerged from the leg about the center of the middle third on the internal lateral aspect. After emergence from the leg it still continued its course downward and forward, and penetrated the left foot on its superior aspect, finally lodging between the second and third metatarsal bones, fracturing, but not comminuting them. The internal condyle of the femur and the head of the tibia were both badly shattered. I considered amputation to be necessary, although I had grave doubts as to the result, both on account of the intense inflammatory action, and also from the length of time that had elapsed since the injury was received, and the fact that the amputation must necessarily be "intermediate." Accordingly, at 11 A.M., assisted by Drs. Terrill and Purdy, I proceeded to amputate the thigh in the lower third by a modified antero-posterior flap operation. A. C. E. mixture was used as the anesthetic, and Esmarch's tourniquet was employed to restrain hemorrhage. Four silk ligatures were applied, but even then there was free parenchymatous oozing from the flaps, which was instantaneously arrested by hot water at a temperature of 150° F.

Since 1878 I have habitually used hot water, never under 150° F., to check parenchymatous hemorrhage following the use of Esmarch's tourniquet, and I have invariably tested the temperature, before using, with a small chemical thermometer. In the Philadelphia *Medical Times* of August 30, 1879, page 569, is a brief article communicated by me in reference to this use of hot water. Dr. Charles T. Hunter, at that time Demonstrator of Anatomy in the University of Pennsylvania, in an article published in the same journal, "On the Use of Hot Water as a Hemostatic in Surgery," (November 22, 1879, page 91), says that this high temperature of the water "is a matter of some surprise, for it is reasonable to suppose that a degree of heat sufficient to coagulate albumin would scald living tissues and excite a grade of inflammatory action incompatible with union by first intention." Facts are stronger than suppositions. I have used hot water, never less than 150°, very nearly a hundred times since December, 1878, to restrain hemorrhage, and not once have I seen it give rise to even the slightest inflammatory action.

A rubber drainage-tube was then inserted at the angle of the wound, the flaps irrigated with sublimate solution 1:1000, and united by deep and superficial silk sutures. The amputation-wound was dusted with iodoform, covered with sublimate gauze, and the stump wrapped in absorbent cotton and snugly bandaged. The foot was then examined, and although the ball could be located with the Nélaton probe, it was so tightly wedged between the bones that I did not deem it advisable at that time to remove it, as the patient had been sufficiently long under the anesthetic. The foot was then irrigated and dressed. No attempt was made to make the operation an antiseptic one, although the parts, hands, instruments, etc., were made thoroughly clean before the operation. On May 10th S. was placed on the cars and transported forty-nine miles, and then seven miles in an ambulance to Fort Huachuca. Twenty-four hours after the operation I turned the case over to Dr. Terrill, who accompanied him to this post, I being ordered into the field. The dressings were removed on the evening of May 13th on account of some bloody oozing, much sooner than there was any necessity. Union

of the flaps was found to be complete, except where the drainage-tube was inserted. On May 16th the stump was completely healed. On May 22d the bullet in the foot was removed, the wound soon healing. An examination of the knee-joint after the operation showed, in my opinion, that under the circumstances amputation of the thigh was the only justifiable operation, as the internal condyle of the femur and head of the tibia were shattered into a dozen fragments, and all statistics of military surgery to date give a most frightful mortality following excisions of the knee-joint for gunshot fracture, greatly exceeding that of amputations of the thigh in the lower third.

The pathological specimen has been sent to the Army Medical Museum at Washington, D. C., and also a photograph representing the appearance of the stump January 1, 1887.

CASE II.—E. K., twenty-five years old, an American, a miner by occupation, and of good habits and fine physique, on February 19, 1886, while passing through Santa Rosa Cañon, Mexico, was fired upon by hostile Chiricahua Apaches and seriously wounded in two places. One bullet, caliber 45, entered the left knee-joint at the middle of the external lateral border of the patella, just grazing it, and then, passing downward and inward, penetrated the head of the tibia, comminuting it and completely separating from its articulation fully one-half of the head of the internal portion of that bone, and finally lodged underneath the skin four inches below the articulation on the internal lateral aspect of the leg. The second bullet, caliber 44, after passing through the sides of a heavy lumber-wagon, entered the right foot on its external lateral aspect, shattered the cuboid bone, and, passing forward, lodged between the fourth and fifth metatarsals, comminuting them. In spite of these serious wounds, K. succeeded in cutting a mule loose from the wagon, mounted it and rode eight miles to his camp, and then fell from the animal, fainting from shock and loss of blood. His fellow-miners did all they could for him, putting cold-water compresses upon his wounds and giving him laudanum to alleviate his suffering, he requiring nearly a quarter of an ounce at a dose. An irregular practitioner from Moctezuma, Sonora, was summoned, whose principal object seemed to be the removal of the bullets, everything else being of secondary importance. After removal of the ball from the leg he poured pure carbolic acid into the wounds and about them, nearly skinning the man's leg, and finally put on side splints and left him. Within a week the wounds were suppurating freely, small fragments of bone occasionally being discharged. Two months after the injury a small abscess formed on the internal lateral aspect of the thigh, communicating with the initial wound of the knee. Save that above mentioned, he received no surgical treatment until I took charge of the case. As he was rapidly losing flesh and strength from the profuse suppuration, he was sent up from Sonora, riding 110 miles over rough roads, and brought to me for examination on July 23, 1886, five months after the injury. He was very much emaciated, exceedingly weak and nervous, and had a temperature of 101.8°. Three fistulous openings on the inner side of the upper third of the leg were discharging freely, and large, loose fragments of dead bone could be plainly felt with the probe. There were also two fistulous openings in the right foot that were discharging pus, and, upon probing, dead bone could be detected. I urged the necessity of an immediate excision of the knee-joint or an amputation of the thigh, but the patient bitterly opposed both procedures, and left the hospital the same day.

On August 4th he returned and placed himself under my care, still strenuously opposing any capital operation. The knee-joint was ankylosed and the relations of the parts were so much changed from their normal condition that it was virtually impossible to ascertain the magnitude of the lesion. As there was much uncertainty as to the extent of the injury to the knee-joint, I informed the patient that there was a bare possibility of saving his leg by cutting down upon it and removing all dead and carious bone. This I did, on August 6, 1886, taking away three large, loose fragments and chiselling out all that what was necrosed or carious. During the operation it was discovered that the large fragment of the head of tibia detached at the time of the injury, although living, had been entirely separated from its articulation and forced externally and posteriorly, so that it lay behind the fibula and in contact with the external condyle of the femur, being ankylosed to both bones. The operation-wound was irrigated with sublimate solution 1:1000, stuffed with absorbent cotton soaked in the same solution, dusted with iodoform and covered with sublimate gauze. The case progressed favorably for six weeks, the patient's general condition greatly improving. The suppurative discharge was very slight and it began to look as if the leg might yet be saved. But a suspicious redness appeared over the external lateral aspect of the articulation that in a few days culminated in a well-defined abscess, the patient having an evening temperature of 103°. This was freely opened and irrigated with sublimate and the joint carefully examined with a probe, with the result of finding the condyles of the femur in a carious condition. At my earnest solicitation the patient finally consented to permit me to use my own judgment in regard to the case. I decided to cut down upon the knee-joint and perform excision in case the lesion of the femur was not extensive; if it was, to amputate the thigh at whatever point I might find sound bone. The operation was performed on September 7, 1886. Both condyles of the femur were found to be seriously diseased and there were also carious patches fully three inches above upon the lower part of the shaft. Amputation of the thigh about the middle of the lower third was then performed by a modified circular operation. A. C. E. mixture was the anesthetic. Esmarch's tourniquet was used to restrain hemorrhage, and catgut employed for ligatures and sutures. Rubber drainage-tubes were placed in the angles of the wound, the stump irrigated with sublimate

1 : 1000, and the edges of the amputation-wound united by deep and superficial sutures. Iodoform was then dusted on the wound and the stump was wrapped in sublimate gauze and absorbent cotton and very snugly bandaged. Whilst dressings were being applied to the amputation-wound, I cut down upon the lateral external aspect of the right foot and removed the cuboid bone and parts of the forth and of the fifth metatarsals. The wound of the foot was dressed similarly to that of the thigh, and one-half grain of morphine given hypodermatically. The patient's temperature on the morning after the operation was 99.6°, three and two-tenths degrees lower than on the day before, and at no time after the operation did his temperature go above 100.2°. Both stump and foot were dressed on the seventh day. There was no purulent discharge from the stump, the amputation-wound having almost entirely healed by first intention and fully one-half of the wound in the foot had healed in the same manner. The case progressed favorably every way, strict asepsis being observed, and in twelve days after the amputation the stump was entirely healed. The foot healed much more slowly, but on November 1st the patient left the hospital, well and in magnificent condition, with the aid of crutches walking upon the injured foot.

The pathological specimen, which, so far as I know, is unique, has been forwarded to the Army Medical Museum at Washington. It shows what tremendous efforts unassisted Nature sometimes puts forth to repair an injury. That the internal half of the head of the tibia, torn from its articulation with the internal condyle of the femur, should retain its vitality and eventually become completely transposed and ankylosed to the external condyle of the fibula and the posterior surface of the other half of the head of the same bone, seems almost incredible, but such is the fact. I am greatly indebted to Chas. C. Barrows, Assistant Surgeon U. S. A., for valuable assistance rendered me during the last two operations on E. K.

CASE III.—On December 15, 1886, while hunting, Private Martin P. Johnson, Fourth Cavalry, was accidentially shot by a comrade. At the time he was shot, he bled profusely, but his comrades succeeded in stopping the hemorrhage by tightly bandaging his leg. On the same day he was carried to a ranch six miles distant. A messenger was sent to the post and Assistant Surgeon T. S. Mason immediately started back with the messenger, reaching the ranch at 3 A.M. As the hemorrhage was controlled, Dr. Mason, fearing a renewal of the hemorrhage, only made a cursory examination of the wound In five hours he started back with Private Johnson and arrived at the post at 8 o'clock in the evening. Owing to the lateness of the hour, I ordered cold antiseptic lotions to be applied to the ankle during the night. The next morning, after etherizing the patient, I carefully examined the leg and found that the ankle-joint was irreparably injured, the carbine bullet, caliber 45, having entered the left foot just above the os calcis, on its internal lateral aspect, had passed obliquely upward, forward and outward through the tibia and fibula about half an inch above the articulation with the astragalus, comminuting them fully three inches above the joint. The articular surface of the tibia was broken into fragments, and in all probability the main arteries of the leg had been torn across. This was, after operation, found to be the fact. The ankle was badly swollen and inflamed and the wound very offensive in spite of the antiseptic applications. I immediately proceeded to amputate the leg at the upper border of the lower third by the ordinary circular operation. Two ligatures, both of gut, were applied to the anterior tibial and peroneal arteries, the posterior tibial being absent. The edges of the amputation-wound were brought together with gut sutures, after irrigation with sublimate 1 : 1000, then dusted with iodoform and covered with sublimate gauze and the stump wrapped in cotton and firmly bandaged. One-half grain of morphine was then given subcutaneously. The stump was not dressed until the fifth day. There was no purulent discharge, but there had been some oozing of bloody serum. The wound was about two-thirds healed by first intention. The stump was irrigated internally through a drainage-tube, the insertion of which I omitted to mention, with sublimate 1 : 2000, and again dressed as before. The case progressed favorably until the thirteenth day, when there was a slight hemorrhage from a small opening that was still unhealed and the whole stump was inflamed. The inflammation was subdued in twenty-four hours and the case went on uninterruptedly to recovery in a little more than three weeks.

An examination of the amputated leg fully justified the operation, as the tibia and fibula had been broken into fragments, eleven in number, some entirely detached, others nearly in place. The anterior tibial and peroneal arteries had been torn across and decomposition had already commenced in the foot. Any attempt to save the leg would have been worse than useless. In the year 1877 I had a case almost identical, save that the arteries were not injured. An attempt was made to save the leg, but after seven or eight months of fruitless labor on my part and a great deal of suffering on the part of the patient, I was compelled to amputate in the lower third. A special report of the case, and also the morbid specimen, were at the time forwarded to the Surgeon-General's Office.

CASE IV.—Private W. R., Company C, 17th U. S. Infantry, aged forty-seven, of Irish birth, was admitted into the post hospital, Fort D. A. Russell, Wyoming, on July 21, 1887, "suffering from a severe penetrating gunshot wound of the right shoulder, with injury to the head of the humerus, the ball passing through the shoulder-joint downward and backward, probably lodging under the scapula. The missile was a 45-caliber rifle bullet." Nothing in the way of operation had been attempted prior to my taking charge of the case in November

1888. At that time the arm and shoulder were honeycombed with sinuses which were discharging profusely, and rapidly draining the vitality of the patient. For over fifteen months he had been in bed, and this also had greatly weakened his constitution. On account of the swollen and indurated condition of the shoulder it was virtually impossible to make a precise diagnosis, but after careful probing I decided that there was necrosis of the coracoid process and glenoid cavity, and of the head and shaft of the humerus to at least two inches below the surgical neck. From time to time small fragments of bone had been discharged from the various sinuses. I then determined that after getting the patient in as good general condition as possible, I would cut down upon the shoulder-joint, remove the necrosed bone from the scapula, and exsect the head and as much of the shaft of the humerus as might be found diseased. By opening some of the sinuses and the daily irrigation of all of them with antiseptic solutions, the amount of purulent discharge was greatly reduced. The improved condition of the patient soon demonstrated the advisability of this procedure. On November 19, 1888, a year and very nearly four months after the injury, I proceeded to carry out the various steps of the operation above mentioned. Ether was used as the anesthetic, and Esmarch's tourniquet as the means of controlling hemorrhage. The first incision was about five inches in length, commencing at the superior edge of the glenoid cavity of the scapula and extending down the middle of the external aspect of the arm. Another incision of three inches in length was now carried across the upper edge of the glenoid cavity and at a right angle with the first one, the two incisions forming a T. These incisions fully opened up the joint. As ankylosis had taken place, to break up the adhesions with very little force I lifted up the arm, when to my surprise the humerus broke off at about the middle of shaft, showing a very much more extensive necrosis than I had anticipated, and adding greatly to the difficulty of the operation and to the risk to the patient. I then cleared the upper fragment of the shaft, disarticulated the head of the humerus and curetted the edges and bottom of the glenoid cavity, removing nearly the half of the coracoid process of the scapula. Then, after lengthening the primary incision, I exsected the lower fragment of the shaft of the humerus at a point four inches above the elbow-joint. During the operation, hemostatic forceps were applied to the spirting arteries, for which, later on, catgut ligatures were substituted. To restrain capillary hemorrhage the wounds of operation were douched with hot water, and, after the introduction of drainage-tubes, closed with deep and superficial sutures of silk. Iodoform was then dusted over the wounds, which were then covered with gutta-percha tissue, with an outside dressing of sublimate gauze. During the last half-hour of the operation the patient was almost *in articulo mortis*, several times becoming pulseless, and twice his respiration stopped. Ether and brandy were injected hypodermatically, the muscles of the chest stimulated by electricity, artificial respiration practised, and as a last resort diluted aqua ammoniæ injected into the median basilic vein. This was followed by a most favorable result, the respiration, although shallow, soon becoming regular, and the pulse reappearing at the wrist. Still for twelve hours the patient was in a very critical condition. The progress toward recovery was very slow, and months elapsed before the wounds of operation were firmly healed. Several of the sinuses remained patent, indicating that some diseased bone had been left behind, and that necrosed bone was still there. This man was kept in the service until March 16, 1890, when he was discharged. Assistant Surgeon Appel, who relieved me at Fort Russell, informs me "that his arm was practically useless from swelling supervening upon any active motion. Discharge from the sinuses would be arrested for a time, but would be renewed after each supervention of inflammation."

Had I not feared that the patient would die upon the table, after my discovery of the extensive necrosis of the shaft of the humerus, I should have amputated at the shoulder-joint, and possibly under the existing circumstances this might have been the preferable operation. At the time of R.'s discharge his general condition was good, yet his arm was useless and constantly liable to inflammation, and he would have been better off without the arm. Of one thing there can be no doubt—that if, at the time of injury, the head and less than two inches of the shaft of the humerus had been excised, this man would have been well in a short time with a fairly useful arm; as it was, sixteen months elapsed before any operation was performed, and as a result his humerus and also the glenoid cavity and coracoid process of the scapula, were necrosed. An examination of the morbid specimen showed that the bullet penetrated the humerus at about its middle and just below the line of junction of the head with the anatomical neck, splitting off a large fragment, but leaving the glenoid fossa uninjured. This man's recuperative powers must have been great, as he stood the drain of a profuse suppuration for sixteen months, and in addition a formidable capital operation. I am indebted to Captain and Assistant Surgeon Frank Ives, U. S. A., and to Dr. Masten, of Cheyenne, Wyoming, for valuable assistance during the operation.

CASE V.—Sergeant H. H., Troop I., Seventh U. S. Cavalry, was admitted to Division Hospital, Pine Ridge Agency, Dakota, December 29, 1890, having been shot in an action with hostile Sioux at Wounded Knee Creek. Sergeant H. was transferred to the post hospital, Fort Riley, Kansas, January 6, 1891. The diagnosis of his case, as given on the "transfer slip," was severe penetrating gunshot-wound of the left arm. Ball entered just external to coracoid process, left scapula, passing through deltoid muscle. "Direction of ball not determined, but supposed to be in neighborhood of joint." If a more precise diagnosis had been made on the entrance of the patient into the Division

Hospital it is probable that the true nature of the injury would have been recognized and a primary operation performed for the removal of the head of humerus. This case came under my charge on January 22, 1891, I having been temporarily ordered to duty at Fort Riley. On January 21st an incision had been made in the shoulder by Assistant Surgeon J. T. Clarke, U. S. A., over the superior portion of the upper third of the humerus, for the purpose of improving the drainage. On account of the swollen and inflamed condition of the parts, I found it impossible at my first examination, to make a positive diagnosis, but felt fully satisfied that the head of the humerus had been struck by the missile and that caries and necrosis of this bone was rapidly going on. The general condition of the patient was bad. He had a daily elevation of temperature several degrees above the normal and he was rapidly becoming exhausted from the profuse suppuration. In addition, he had a severe bronchial catarrh, probably due to exposure en route from Pine Ridge. Although the outlook was not promising, Assistant Surgeon Clarke and myself concluded that it would be advisable to cut down upon the shoulder-joint, determine the extent of injury, and if it should be found necessary, to exsect the head of the humerus. On January 23d, after ether-anesthesia had been induced, two ounces of brandy having been previously administered, I proceeded to carry out the plan mentioned. I first enlarged and deepened the incision previously mentioned, carrying it down to the bone. This incision extended from the center of the superior edge of the glenoid fossa to a point on the shaft of the humerus four inches below. To facilitate the operation, I made a second incision directly over the superior edge of the glenoid cavity and at a right angle to the upper end of the first incision. The first incision opened a pocket containing a large amount of purulent débris. The tissues generally were in bad condition and infiltrated with pus, the small arteries breaking down under the forceps. Following the first incision there was very free hemorrhage, which, on account of the friability of the arteries, was exceedingly difficult to control, it being almost impossible to take them up with the hemostatic forceps. The second incision opened up the joint and it was then ascertained that the bullet had furrowed its way through the superior surface of the head of the humerus and that there was free communication with the medullary cavity of the shaft, the result of osteo-myelitis. It was then deemed best to exsect the head and a small portion of the shaft of the humerus. This was done by passing a chain-saw under the bone, cutting through it, and afterward disarticulating the head of the humerus. It was then discovered that the osteo-myelitis had attacked the humerus below the point of section and that the medulla was converted into purulent pulp. But for the exceedingly precarious condition of the patient I should have amputated at the shoulder, as I was firmly convinced, in case he survived the present operation, that a future amputation would be inevitable. From the beginning the patient did not take the ether kindly, and when I finished the operation proper, even after repeated hypodermatic injections of brandy, he was almost moribund. The operation-wounds were douched with hot sublimate solution 1 : 2000 and rapidly closed with interrupted sutures of silk, a drainage-tube having been introduced. The wounds were then dusted with iodoform and covered with compresses of sublimate gauze. Hot-water bottles were placed around the patient and a half grain of morphine was given hypodermatically. In about twenty minutes there was some reaction and, being able to swallow, he was given some strong coffee and brandy. Stimulants by mouth and rectum were given from time to time, but the patient gradually sank and died of exhaustion at 8 P.M. on the same day, six hours and a half after the conclusion of the operation.

Death in this case probably resulted from the shock of operation and hemorrhage, which latter, although not excessive, was sufficient in the patient's enfeebled condition, added to the shock, to superinduce an unfavorable termination. The quantity of ether consumed was twelve ounces. The length of exsected bone was two inches and a half. The morbid specimen has been sent to the Army Medical Museum. I am deeply indebted to Assistant Surgeon J. T. Clarke for his skilful assistance during the various stages of the operation.

These cases have not been reported because they present any very marked peculiarities or anything original in the way of operation or treatment, but because they are cases representative of injuries which at present are rarely seen in military and hardly ever in civil practice. They are also illustrative of the havoc that the modern rifle-bullet produces when traversing a joint or passing through bony tissue. When one of these projectiles enters a joint, it comminutes everything within three or four inches. The tremendous force with which these missiles are propelled not only makes them destroy and devitalize bony tissues directly in their path, but also makes every fragment another projectile which in its turn breaks and rends. When it is considered that the rifle-bullet, weighing from four to five hundred grains, impelled by the explosive force of from seventy to ninety grains of gunpowder, will kill at a greater distance than two thousand yards—more than a mile—these injuries are not so marvellous. The experience of our Civil War, as recorded in the *Surgical History of the Rebellion*, most strongly trends in the direction of primary operations when large joints are opened and especially so in injuries of the shoulder-joint. During the last twenty years a strong tide of conservative surgery has swept over the world and now no injury is looked upon as necessitating a capital operation unless vitality in the wounded part is absolutely destroyed. This, I think, is a grave error, especially as regards gunshot wounds produced by missiles

the caliber of which exceeds 38. In addition to the apparent injury, the concealed injury must be taken into consideration, as it often becomes the most important factor in the case. Take for instance the case of Sergeant H. The head of the humerus had been furrowed by a bullet of large caliber, with no apparent fracture, and at first sight the injury does not seem sufficiently severe to demand operative interference; yet when we bear in mind the fact that the cancellous tissue for an inch beyond the track of the missile was probably devitalized by the tremendous impact of the ball and that in this class of cases caries and necrosis must almost be the inevitable result, it may be well to consider the future danger, and by timely operative interference save life and limb. A primary exsection would probably have saved Sergeant H.'s life and given Private R. a useful arm. Asepsis will do much, and I know of no heartier advocate of its merits than myself, yet I am of the opinion that whenever any of the large joints are injured by the modern rifle-bullet of large caliber, conservative surgery must fall to the rear and give place to more heroic methods. Civil surgeons rarely encounter such cases, most of the gunshot wounds that they treat being made by bullets of small caliber, from 22 to 38, and propelled by small charges of powder. Here conservative surgery has a most brilliant opportunity, the injury done by such projectiles being limited in extent, because they do not have sufficient force to do much harm outside of their direct course.

THE CAUSES AND PREVENTION OF DIPHTHERIA IN CITIES.[1]

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THE air that surrounds our earth like a vast sea, at the bottom of which we dwell, teems with innumerable forms of minute organisms, some animal and some vegetable, which, possessing vitality, are subject to constant changes. As with larger organisms, these changes are greatly influenced, if not absolutely caused, by the environment, while the organisms in their turn reciprocally produce or aid in the production of changes in the materials surrounding them. Many of them, such as the putrefactive germs, are incapable of existence within the living body and can only complete their life-history surrounded by that which is dead. Others again are capable of maintaining an existence in living tissues in a pathological state, being either the cause or the effect of such pathological condition as an accidental concomitant.

Since the discovery some years ago that tuberculosis owes its existence to a specific germ, the bacillus tuberculosis, many students have entered the field of bacteriological research, and extensive experiments have been conducted in order to discover, if possible, the microscopic organism or organisms that might be the *materies morbi* of the several contagious and infectious diseases. In the prosecution of these studies, diphtheria has received its full share of attention. At intervals during the past fifteen years or more, the discovery of the specific germ of the disease has been announced, but thus far in every instance further investigation has shown that the pathogenic germ of the disease, if there be such, has not yet been isolated. The Klebs-Löffler microörganism, discovered in 1883–1884, was for a long time thought to be the ultimate cause of the disease, but its claim as such has since been greatly weakened or destroyed, inasmuch as in a number of cases of diphtheria it was absent, and it has been found on the buccal and faucial surfaces in cases of measles, scarlet fever, and in cases in health. Professor Oertel, who early advocated the microbic origin of the disease (*Ziemssen*, 1868), now admits that that theory is only plausible, not proved. He expresses the belief that bacterial organisms cause the disease, though not directly, by producing ptomaïnes that infect the system and render the disease constitutional. The microbe itself is mostly confined to the surface, while the action of the virus is "widespread and deep." Professor Crookshank (*Lancet*, vol. i., 1888, p. 115) states as the result of his own investigations and those of Winckel, Fränkel, Eiselsberg, Löffler, Baumgarten, and others, that the microörganisms once thought to be the *materies morbi* of the various diseases—erysipelas, scarlatina, diphtheria, puerperal fever, surgical fever, pneumonia, typhoid fever, variola, vaccinia, measles, yellow fever, pyemia, septicemia, broncho-pneumonia, syphilis—are one and the same, namely, the streptococcus pyogenes, variously modified by the individual disease. Drs. Welch and Abbott, of Johns Hopkins University (*Bulletin of Johns Hopkins Hospital*, February and March, 1891), have recently published an article on the etiology of diphtheria, and from their own experiments and operations conclude that the Klebs-Löffler bacillus is absolutely the specific cause of the disease, that the blood and tissues are profoundly affected by the virus of that disease, and that microörganisms may gain entrance into the circulation and escape destruction."

We are thus at this time unable to state with any degree of certainty that this or that microörganism is the specific cause of diphtheria, or even that the disease is of microbic origin at all. Indeed, much evidence has been adduced that tends to prove that the virus of the disease is not a specific germ, and

[1] Read before the Wisconsin State Medical Society, June, 1891.

the opinion is held by at least a few good observers that cases may arise from a combination of unsanitary environments not fully determined. Repugnant as this view may be, in this era of germ-theory of infectious diseases, there are nevertheless many facts not to be ignored that appear to support it. For example, of fifty outbreaks of diphtheria in England (*British Medical Journal*, 1888, p. 167) it was only possible in four to trace the first case to contagion. In the remaining forty-six outbreaks, the first cases were all attributed to unsanitary surroundings; in 15 to cesspools, in 10 to defective drainage, in 11 to the keeping of animals in an unclean condition in close proximity to the house, and in the remaining 10 to decaying and offensive manure-accumulations. Cases of the disease, moreover, regularly appear in greater numbers in the winter months, a period relatively unfavorable to the growth of the lower forms of both animal and vegetable life. Thus, in the last five years, during the winter months there were in Milwaukee 245 deaths from diphtheria, whereas during the summer months of the same year there were but 92 deaths from this disease. Barnes (*British Medical Journal*, 1888, p. 167) gives prominence to the fact that the disease is as prevalent in rural districts as in cities and towns, the element of contagion in cities being counterbalanced by decaying animal and vegetable matter, and dampness of soil in the country. M. W. Taylor (*British Medical Journal*, 1889, p. 938) reports a number of cases of diphtheria that appeared to have been caused by mold-fungi on the walls of sleeping-rooms, and he advances the suggestion that these innocent vegetable fungi—aspergillus, coprinus penicillium—may by special cultivation become pathogenic, and referred to the experiments of Grawitz, Sepinger, Nägeli and Buchner to sustain his position. He thought that the existence of zymotic diseases depended, not on individual germ, but upon the soil in which the germ grew, and drew the inference that common molds, both by spores and byssoid mycelia, might originate diphtheria by growing on noxious media. The disease, once having arisen, spreads by contagion in public places and in private houses. In cities, particularly in the East, the sewers have become infected by the virus of the disease, so that many cases are attributed to defective plumbing, by which means dwellings are impregnated with sewer gas.

During the past year diphtheria has been unusually prevalent in the city of Milwaukee, the vast majority of the cases occurring in the outlying districts and in houses having no inside sewer connection, so that we have no reason to think that one sewage system has become the habitat of the *materies morbi* of the disease. Another fact observed in a large number of cases was that the cellars under the houses were low and damp, and frequently contained vegetable matter in a state of partial decomposition. In a number of instances, chickens or ducks were kept in the cellars, and the emanations from their excreta were added to those from decaying vegetable matter. While such environments may not actually cause the disease, it will certainly not be denied that they contribute to that end. Thus Dr. Sternberg (*Lomb. Prize Essay*, p. 38) says: "It seems extremely probable that the diphtheritic poison-germ is capable of generation, independently of the sick, in damp, foul places such as damp cellars, especially under old houses in which the floors come near the surface of the ground, leaving damp, ill-ventilated spaces."

While reluctantly compelled to admit that in spite of the enormous amount of labor expended in the search for it, we are still ignorant of the *materies morbi* of diphtheria, we are fortunately able to speak with greater positiveness as to the means to be adopted in order to limit its spread. Recognizing that all unsanitary environments are predisposing causes of the infectious diseases, reason dictates that such factors should, as far as possible, be removed. The soil should be drained so that the cellars may be free from dampness; decaying animal and vegetable matter should be removed; the thorough ventilation of enclosed spaces, of the cellars and rooms of dwelling-houses, should be secured; the source of water-supply should be investigated, a supply of impure water being a no less potent factor in the causation of disease than an impure atmosphere. Any locality in which attention is paid to these matters will generally exhibit a mortality below the average for the whole community; if these precautions are neglected the reverse will be the case. Thus, to compare four wards in the city of Milwaukee in which the contrast in this respect is striking. The mortality for the whole city for the year 1890 was 17.02 per 1000 of population; in the 15th and 16th wards, with a population of 16,389, in which the environments are comparatively sanitary and the drainage good, the mortality was 13.54 per 1000, whereas in the 8th and 14th wards, with a population of 28,576 and comparatively unsanitary surroundings and imperfect drainage, the mortality was 20.05 per 1000, that of the 14th ward alone being 21.72 per 1000.

The environment having been rendered as favorable as possible, the other measures to be enforced in limiting the spread of diphtheria may be summed up in the two words: *isolation* and *disinfection*. Under existing circumstances isolation cannot be perfectly accomplished in the large cities; an ideal isolation would require the removal of the patient to

an institution especially provided for his care, and the admission to his presence of none but the physician and nurse. So far as I am aware, there are not many cities in this country in which even an attempt has been made to secure such isolation, but in Great Britain and in Germany, where this has been more or less vigorously enforced, the results in lowering the mortality from diphtheria have been very striking (*Sanitarian*, September, 1890, p. 218). In cases of smallpox it is a comparatively easy matter to secure almost ideal isolation, for, with few exceptions, the people, even the most ignorant, are fully alive to the dangers of that disease and the mode of its propagation by contagion; but it is altogether different in the case of diphtheria, a disease which every year carries off its victims by thousands. It is not uncommon to find the room of a diphtheritic patient filled with sympathizing neighbors and their little children, and in order to secure private funerals in these cases it has been necessary for the health officials to use force in clearing the houses of people who were willing to submit their families to the probability of infection. Until this singular ignorance or indifference is removed it will be impossible to obtain more stringent legislation for the isolation of the infected, or even to rigidly enforce the laws already in existence. In 1887, the city of Boston provided a place for the treatment of contagious diseases; since that time public sentiment has been so educated as to render it possible to treat a constantly increasing proportion of such cases in that institution (the Boston City Hospital). An effort is now being made by the Health Commissioner to establish in Milwaukee a system of isolation-hospitals or cottages for the treatment of infectious diseases, and it is greatly to be desired that his efforts may be crowned by success. It seems to me that when public sentiment shall have been properly educated in this direction, and a large proportion of cases of disease, occurring especially among the poorer and more ignorent classes, is treated in hospitals provided for the purpose, to which visitors are not admitted, a great advance will have been made in preventive medicine. The city of London is not only the greatest, but is also the healthiest city in the world, having the smallest annual mortality, very largely because the system of isolation is thoroughly enforced.

Under the present system of placarding houses in which diphtheria or other contagious diseases exist, the number of cases occurring in an outbreak has been materially lessened, but placarding a house only secures partial isolation. If there are other children in the infected family, they are excluded from the schools, public or private, but they run at large upon the streets, enter neighbors' houses, and not infrequently are accompanied to their own homes by their little playmates. They go to the stores and markets, the father continues at his usual occupation, and the mother will even often leave the sick one to go out washing or scrubbing. The disease occasionally makes its appearance in a family the business of which is carried on at home, for example dressmaking or tailoring, and unless under police supervision the members will often continue their pursuits and infect families remote from and unknown to them.

The length of time during which isolation, as far as is practicable at present, should be maintained is an important question. It has been the custom of the Health Department of Milwaukee to remove placards from houses infected with diphtheria as soon as the attending physician reports the case recovered, and that is frequently within a week from the first notice of the disease. All experience goes to show that isolation for so short a time is entirely insufficient. At a meeting of the Society of Public Hygiene of Paris last year (*Sanitarian*, August, 1890, p. 154) it was decided that a child should not be readmitted to school in less than forty days from the date of the onset of the disease. Roux and Yersin (*British Medical Journal*, vol. ii., 1890, p. 753) remark: "Active diphtheritic virus can remain in the mouth for a long time after the malady is cured. Consequently diphtheritic patients should only be allowed to resume their ordinary course of life when they are no longer bearers of the bacillus." It is not uncommon for successive cases of diphtheria to occur in the same family at intervals of several days or weeks, or for the same child, after recovery, to be seized a second time. When families are so situated as to render it impossible to keep the sick in a separate apartment, it has been thought that the danger of the spread of the disease to other members of the household would be lessened if they used a gargle of a one per cent. solution of creolin four or five times a day (*Medical Record*, January 31, 1891, p. 136).

In case of death from diphtheria the body should be immediately wrapped in a sheet saturated with a 1 : 3000 solution of mercuric chloride and should still remain isolated. Funerals should be strictly private, no one being admitted to the presence of the body except those who have already been exposed, and the clergyman whose duty calls him to such places; the service over, the view of the body should be as brief as possible. Strictly private funerals should be rigidly enforced, there being no doubt whatever but that in cases of contagious disease, public or semi-public funerals materially aid in the spread of the disease. This was found to have been the case in Milwaukee during the past year, and our Commissioner of Health found it

necessary to enforce funeral regulations with a firm hand, a sanitary police officer attending every funeral to see that the law was observed. At first, some difficulty was experienced and in some cases physical force was necessary to disperse crowds that assembled about the remains of the dead. The people, however, have now learned that they can have funerals of only the most private kind, and the officers have no further trouble. Following the adoption of this rule by the Commissioner, the number of cases reported weekly has gradually diminished, so that there can be no doubt but that one source of contagion has been removed. While the rule as to private funerals has been thus rigidly enforced, the people have been assured that the law was not enacted for the purpose of restricting the rights of individuals, but for the conservation of the public health.

Disinfection is not less important than isolation in limiting the spread of diphtheria. The atmosphere of an enclosed space cannot be said to have been disinfected until not only the vitality of pathogenic microörganisms has been destroyed, but also the vitality of their spores. As practised by the Health Department, disinfection is not accomplished at all. Infected houses, to be sure, are fumigated, but that is about all it amounts to. We have abundant proof of this. When a member of a family falls a victim to the disease the children are frequently sent to a neighbor's or out of town. After the recovery or death of the patient and the fumigation of the house the children are brought back and in a large proportion of cases in their turn become subjects of the same disease. With the means at our disposal, however, this is all that is attempted for the public, and until that public is willing to place large resources in the hands of its health authorities and confer upon them greater power, it is *all that can be done in this direction.*

[NOTE.—At the present time the Health Department of Milwaukee has under consideration plans for the construction of a disinfecting patrol, by means of which it is hoped to secure more complete destruction of disease-germs, especially in clothing and bedding.]

In Milwaukee one man is expected to "disinfect" about a thousand houses per year, and as a matter of fact he does fumigate nearly fifteen hundred. The public will pay liberally to protect itself against fire and the predatory acts of the criminal class, but for the disposition of its feces and the prevention of disease it doles out the dollars with a niggard hand.

It is no part of my intention to enter at all minutely into the subject of disinfection. To do so would require a paper beyond the limits of this. It will suffice to call attention to the well-settled conclusions reached by experiments and confirmed by experience. The air in the sick-room should be kept as pure as possible; the use of disinfectants here seems to me entirely inefficient and illogical. No human being could long live in a room the atmosphere of which was impregnated with a disinfecting agent in degree sufficient to produce results; hence the futility of using anything of the kind. In fact, by obscuring foul odors emanating from the sick, positive harm may be done the patient and attendants. The only appropriate disinfectant for the room occupied by a diphtheritic patient is *pure air;* hence the room should be thoroughly and systematically ventilated, a change of air being effected as frequently as possible. By this means we effect disinfection by dilution and oxidation. The discharges of the patient should be disinfected, and especial care should be given to the discharges from the nose and throat, which should be received into cloths that immediately after having been used are to be consigned to the flames. As these discharges are the sources of contagion, great care must be taken that they are destroyed absolutely. The clothing and bedding used about the patient can best be disinfected by thorough boiling for half an hour or more. They may equally well be disinfected by immersion for four or five hours in a 1 : 2000 solution of mercuric chloride. The disinfection of the room which has been occupied by the patient must receive careful attention. The windows and doors should be tightly fastened, so that the room is as nearly as possible hermetically sealed, and, according to the directions of the American Public Health Association, three pounds of sulphur should be burned, in the presence of moisture, for every thousand cubic feet of air-space. The fumes of the sulphurous acid should pervade the atmosphere of the room for at least twelve hours (twenty-four would be better), and then the room should be ventilated. The carpets and the furniture should then be removed and thoroughly aired, while at the same time the wood-work in the room is vigorously scrubbed. Unless great care has been exercised in confining the contagion to the room occupied by the patient during the course of the disease, every room in the house should be treated in the same way. By this plan of disinfection I believe the *materies morbi* of the disease can be destroyed, so that susceptible persons may subsequently occupy the rooms with impunity.

Some years ago, while acting as health officer of a town in the northern part of Wisconsin, these means were thoroughly applied in three outbreaks of contagious diseases, namely, scarlatina, smallpox, and measles, with the result that only one house was infected in each outbreak, although the field was a good one for the spread of any one of these

diseases—that is, there had never before been a case of either of them in the town.

When the disease has prevailed to any extent among the pupils of a given school, that school should be thoroughly disinfected according to the directions already given, and I would suggest that, in cities, all of the school-houses should be submitted to this proceeding every year.

THE PURSE-STRING OPERATION FOR CYSTOCELE.

With a Report of Cases.

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EVERY practitioner of experience is well aware of the trouble and annoyance that a cystocele occasions, not only to the patient, but to himself; of the many expedients to which it may be necessary to resort to keep the prolapsed parts in their normal position, and the want of success that often attends his most persistent and painstaking efforts. As yet no means of mechanical support has been devised that, in a goodly number of the cases that come to us for treatment, permanently benefits or even temporarily remedies the displacement with comfort to the patient. Neither has operative treatment accomplished all that was fondly hoped of it.

To Dr. Marion Sims is due the credit of bringing to the notice of the profession an operation for the relief of cystocele, with which he claims to have had unusual success. In his *Notes on Uterine Surgery* he reports only one failure in the large number of cases operated on. Later operations, however, were not attended with as good results. In fact, owing to the stretching of the tissues, many of the cases operated upon were no better a short time after the operation than they had been before.

The writer believes that whenever a cystocele can be supported with comfort "by any kind of pessary with the only inconvenience of an occasional removal of it, and the substitution for a week or so of astringent tampons to allow an erosion to heal, an operation is not necessary, even though the pessary must be worn continuously; nor in the case of young women, whose vaginæ have not become overdistended throughout, and where a cure may be expected in a year or two, if the parts be properly supported; also in old women past the menopause, whose tissues have become so relaxed and flabby from age and childbearing, and whose vaginal walls have lost all contractility, so that a cicatrix would be sure to stretch soon after the patient left her bed." In cases like those referred to, an operation is not justifiable, because it is not necessary, or because there is no prospect of a cure; but in cases in which the woman objects to wearing a supporter, in which the tissues possess a fair degree of tone, in which the cystocele is too large to be cured by wearing a supporter, and in which there is rupture of the perineum that demands an operation, then anterior colporrhaphy is indicated and will usually be followed by a good result.

During the first years of my operative experience I performed the Sims operation, or some modification of it—but in all cases the sutures, which were of silver wire, were passed as Sims recommended, *i. e.*, transversely. The parts always healed, and for a time the operation appeared to be successful; but in a few months, in quite a large proportion of the cases, the parts began to stretch, and in a few months more the patient was in a condition similar to that existing before the operation. Another objection to this operation is the difficulty of removing the stitches, if the perineum is repaired at the same time, as it has been in all of my cases. Not satisfied with the results in these cases, about fifteen months ago I performed my first so-called purse-string or tobacco-pouch operation for cystocele, with very satisfactory results.

CASE I.—Mrs. B., thirty-eight years old; born in Germany; married nineteen years; was the mother of eight children, the eldest eighteen years old, the youngest two years old. Her labors were always comparatively easy and rapid. For the preceding ten years she had suffered from both rectocele and cystocele, the condition gradually growing worse. Doubtlessly, the perineum had been ruptured at the birth of the first child, although the patient did not know when the rupture occurred. Whenever she was on her feet for any length of time, a prolapse of the anterior vaginal wall, as large as a medium-sized orange, would take place, and every pessary that was tried failed to keep the parts in place. Hence, it was decided to operate. The operation was performed on March 6, 1890, at the patient's house, with the assistance of two members of the graduating class of Niagara University. For two or three days previously the woman had received the preparatory treatment usual in such cases. She was placed in the lithotomy position, and the legs supported by Kelley's Beinhalter. Before the patient is completely anesthetized there is always retching or straining, so that the parts are usually protruded to their full extent. Beginning at a point about half an inch below the meatus, and passing around the protrusion, near its junction with the parts that were in normal position, I cut through the mucous membrane and made a complete sweep of the cystocele, returning to the point at which the incision began. In this case the cut was less than an inch in front of the cervix. Then, with a tenaculum catching the membrane, with a knife I carefully dissected off the entire mucous membrane included within the line of incision, care being taken not to cut too deeply, as the bladder is easily entered, and it unnecessarily weakens the parts to remove more tissue than is

absolutely required. The membrane was removed in one piece, and the bleeding was slight. The denuded surface was two and three-quarters inches in its antero-posterior diameter, and about two and a half inches in the transverse. For sutures I used No. 7 braided silk that had been kept for six hours in melted wax one ounce, and carbolic acid and salicylic acid, of each half a drachm. Threading a piece, fifteen inches long, at each end with the needles that are used in operations upon the cervix, the first suture was passed nearest the cervix, on one side of the raw surface, in and out of the mucous membrane, about a third of an inch from the denuded edge, until the median line just below the meatus was reached. The same method was pursued on the other side with the other end of the suture. The wound was then cleansed, and with the point of a sound pressed in toward the bladder. The edges of the wound were brought closely together by crossing and pulling on the ends of the silk, in the same way as a purse or tobacco-pouch is closed. The suture was then tied. There was a little dimple in the center, but no raw surface was to be seen or felt. One end of the suture was cut short, and the other end brought out upon the thigh, and secured by adhesive plaster. A thick mass is formed on the anterior vaginal wall, the apposed raw surfaces of which adhere to one another without inconvenience, resulting in a firm support to the bladder.

The perineum was repaired by Emmet's operation. The patient was put to bed, and treated in the manner usual after such operations.

For the first twenty-four hours she had nothing but a swallow of hot water every hour or so. After that she was given beef-tea or broth, until on the third day her bowels were moved. This was insured by the administration of a grain of calomel every hour until three doses had been taken, followed by a Seidlitz powder two and a half hours later. The bowels were subsequently moved every second day.. A light diet was given. The catheter was used but twice, the patient being allowed to urinate as soon as she was able to do so. After each urination the parts were cleansed with carbolized water from a fountain syringe. No vaginal douche was used. Ten days after the operation the suture was removed without difficulty, and union was found perfect. The sutures were removed from the perineum at the same time. The patient was kept in bed three weeks, when she was allowed to sit up, and a week later to walk about the house.

This patient is obliged to work hard, and to be on her feet a good deal. At this writing, nearly fifteen months after the operation, the support is apparently as good as it was when she got out of bed. She has no cystocele, and suffers no inconvenience whatever from the effects of the previous injury.

CASE II.—Mrs. H., forty years old, the mother of seven children, the oldest twenty-one years old, the youngest six years, was admitted into the Sisters of Charity Hospital, October 7, 1890. Her labors were said to have been severe, but not tedious. The patient was stout and fleshy, and only complained of the enormous cystocele and the accompanying symptoms. She stated that the trouble had existed for eight or ten years, and that it was growing worse.

The protrusion externally of the anterior vaginal wall was as large as a fetal head. The patient was unable to urinate without returning the prolapse with her fingers. The uterus also dragged down. The perineal rupture was slight. The patient was put in as good condition as possible, and four days later anterior colporrhaphy was performed as in the preceding case, the denudation, however, being much more extensive, involving an area three inches in the antero-posterior diameter, and nearly as large in the transverse. Excepting that the flap-splitting operation was performed on the perineum, the procedure and the after-treatment were the same as in the first case. The stitches were removed on the eleventh day, but the patient was not allowed to get out of bed for three and a half weeks. A week later she was permitted to walk. The union was complete.

The patient, who is a laundress, has followed her occupation for several months past, is well, and now, after the lapse of seven months, presents no indication of her former trouble.

CASE III.—Mrs. W., forty-two years of age, a widow, the mother of three children, the oldest twenty years old, the youngest nine, was admitted into the Sisters' Hospital November 1, 1890. Her labors had been severe and tedious. She had been a domestic for the preceding six years, but was then unable to work.

She had a decided cystocele, with a moderate perineal rupture. A week after admission I operated as in the cases related, doing the flap-splitting operation on the perineum. As the prolapse was not as great in this as in the previous cases, as much surface was not denuded, but the rest of the operation and the after-treatment were the same, except that the catheter was used but once. The stitches were removed on the eleventh day. The patient was allowed to sit up at the end of three weeks, and to walk about at the end of four.

There is now no prolapse or sagging of the parts.

I am aware that the last two cases are too recent to be considered definitely cured; yet, one of the patients has had nearly five months of hard work since the operation, and there are no indications of a return of her former trouble—and this was the worst case of the kind I ever saw. If the operation were not successful it would seem that there should be some indications of a recurrence of the previous condition.

In the last case, as already mentioned, there is now no prolapse or sagging of the parts, yet the woman complains of a dragging sensation in the pelvis, which I attribute to a dislike of work rather than to any pelvic trouble. It will, however, take

at least another six months to tell whether this operation will have been successful or not.

In the first case, the operation was performed sufficiently long ago, and the woman has done enough hard work since to fully demonstrate that in her case the benefit is permanent.

In addition to the foregoing cases, I have performed the operation in two others, with apparent success, yet time enough has not elapsed to determine definitely what the results will be. I am convinced, however, that better results will be obtained from this operation than from any other, as it gives a thicker and firmer support that is less likely to stretch.

One important point in this operation is to denude as large a surface as practicable—the cicatrix is the firmer, and the result is the more likely to be permanent. Another important element in securing a good result is to keep the patient in the recumbent position for some time, until union becomes secure and firm, so that stretching is not likely to occur.

ORIGINAL LECTURE.

THE HEART: ITS MURMURS, THEIR DIAGNOSIS AND TREATMENT, AND THE ACTION OF THE CARDIANTS AS A CLASS.[1]

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LECTURE V.

HAVING in previous lectures discussed the physiological actions of alcohol and of digitalis, we to-day begin with a consideration of convallaria.

In regard to *convallaria* there is comparatively little to be said. Of its two active principles only one, convallamarin, is supposed to have any action upon the heart. It, like digitalis, is a CHO compound and is transformed into and eliminated from the system as carbon dioxide and water. While passing through its cycle of change within the body it evolves heat and energy, as a result of which the force and length of the systole are increased. This salutary effect upon the heart appears to be largely due to the lowering of a previously existing unduly high tension; if any increased blood-pressure follows the use of convallamarin, it is a secondary result of the improved action of the heart. It is stated that convallaria should be clinically used when high tension contra-indicates the use of digitalis. It is also said that convallaria in some inexplicable manner stimulates the right heart in preference to the left, and especially in pneumonia. If convallaria primarily lowers arterial tension and secondarily improves the heart's action—which is in accord with clinical observation—its good effects upon the right heart in pneumonia are quite in harmony with general physiological laws and do not necessitate the supposition of an undemonstrable and specific action of the drug. By lowering the general blood-pressure, it very decidedly removes the resistance to the onflowing blood in front of the left heart, thus enabling the left ventricle more rapidly and effectually to pump the blood out of the engorged pulmonary vessels. This, in turn, makes more room within the pulmonary circuit, reducing the resistance in front of the right ventricle, and explains the apparent directly stimulating action upon the right heart, with its clinical results. As convallaria lowers the general blood-pressure, it tends to raise that of the splenic arcade and renal system. It is for this reason not diuretic, except in a mild and secondary manner, through a universal improvement in the general circulation and heart's action.

Strophanthus is another drug of exceedingly uncertain composition. As the evidence stands at present, strophanthus contains two CHO or glucosidal bodies. One of these is freely soluble both in alcohol and in water, the other is insoluble in both. Strophanthus is also said to contain two alkaloids, one of which is toxic and freely soluble both in alcohol and in water. The chemical atomicity of these alkaloids has not yet been formulated, so that their exact action is uncertain. This complex composition and positively poisonous nature of some of the contained active principles render the administration of strophanthus unsatisfactory. Again, the source and purity of the original plant render doubtful the absolute composition of any preparation used. Nevertheless, the most positive results are attributed to the action of strophanthus upon the system.

Personally I have had little experience with strophanthus and that little has been most unsatisfactory. My first acquaintance with strophanthus and its action upon the human economy was at the necropsy table. The subject in question had been admitted to the hospital a few days previously and the diagnosis of a mitral lesion was made. A mixture of strophanthus was administered. The cardiac murmur disappeared and the patient died. The post-mortem examination showed every organ in the body to be macroscopically sound. Microscopically no lesion of sufficient magnitude could be found to explain the sudden death. In every instance in which I have administered or recommended strophanthus, the patient has died, not necessarily from the action of the drug, but from the results of the legitimate pathological conditions. Cognizant of the great uncertainty as to the composition and actions of strophanthus, I have ceased to use it and am patiently waiting for further developments. Being in part a CHO compound, it must over-stimulate and ultimately injure or poison the cardiac muscle, like digitalis and other drugs of similar constitution. If it does not directly increase the blood-pressure, there ought to be no danger of the so-called cumulative or poisonous effects upon the muscle-fibers of the heart. If it does not increase the general tension, its diuretic action must be slight, limited and secondary to the uniform improvement in the circulation by the augmented heart power.

I have had no experience with *Adonis vernalis* or its active principle *adonidin*. If it be true that it is ten times as poisonous to the cardiac muscle as digitalis, I prefer not to experiment with it.

The same may be said of the active principle of

[1] A series of lectures delivered at the New York Post-Graduate Medical School and Hospital.

broom, *sparteine*, which is a toxic liquid alkaloid. It must of necessity be a dangerous drug. It may be a ready and positive cardiac stimulant, capable of being converted into urea, carbon dioxide and water (see table); but in passing through the changes necessary to its elimination as excrementitious matter it is likely to give rise to the development of toxic leucomaïnes or nitrogenous principles, with disastrous consequences.

This brings us to a consideration of the most valuable class of remedies in the treatment of cardiac affections, functional or organic, namely, the true cardiac tonics, or compounds that have a nitrogenous basis and are capable of forming body-tissue or of retarding retrograde metabolism.

POSSIBLE PRODUCTS OF OXIDATION OF THE CHO, CHN, AND CHNO DRUGS.

Drugs.	*Active principles.*	*Formula + ami. of O used.*	=	*Urea + Carbon dioxide.*	+ *Water.*
Alcohol,	Ethylic alcohol,	C_2H_6O			
Digitalis,	Digitoxin,	$C_{21}H_{32}O_7 + 51O$	=	.....	$21CO_2 + 16H_2O$.
	Digitalin, *glucoside*,	$C_5H_8O_2 + 12O$	=	.....	$5CO_2 + 4H_2O$.
	Digitalein, "	$C_{28}H_{40}O_{15} + 55O$	=	.....	$25CO_2 + 20H_2O$.
	Digitonin, "	$C_{31}H_{52}O_{17} + 71O$	=	.....	$31CO_2 + 26H_2O$.
	Digitin, "	Not formulated.			
Convallaria,	Convallamarin, "	$C_{23}H_{44}O_{11} + 57O$	=	.....	$23CO_2 + 22H_2O$.
	Convallarin, "	$C_{34}H_{62}O_{11} + 88O$	=	.....	$34CO_2 + 31H_2O$.
Strophanthus,	Strophanthin, "	$C_{29}H_{84}O_{11} + 46O$	=	.....	$26CO_2 + 17H_2O$.
	Strophanthidin, "	Not formulated.			
	Ineine, *alkaloid*,	Not formulated.			
	Strophantine, *toxic alkaloid*	Not formulated.			
Scoparius,	Scoparin, *neutral body*,	$C_{21}H_{22}O_{10} + 43O$	=	.....	$21CO_2 + 11H_2O$.
	Sparteine, *liquid alkaloid*,	$C_{15}H_{26}N_2 + 40O$	=	$CH_4N_2O + 14CO_2$	$+ 11H_2O$.
Ammonium Carbonate,	Salt,	$2(N_3H_{11}C_2O_8)$	=	$3CH_4N_2O +$ CO_2	$+ 5H_2O$.
Coffee,	Caffeine, *alkaloid*,	$C_8H_{10}N_4O_2H_2O + 13O$	=	$2CH_4N_2O + 6CO_2$	$+ 2H_2O$.
Nux vomica,	Strychnine, "	$C_{21}H_{22}N_2O_2 + 47O$	=	$CH_4N_2O + 20CO_2$	$+ 9H_2O$.
Opium,	Morphine, "	$2C_{17}H_{19}NO_3 + 82O$	=	$CH_4N_2O + 33CO_2$	$+ 18H_2O$.
Belladonna,	Atropine, "	$2C_{17}H_{23}NO_3 + 85O$	=	$CH_4N_2O + 33CO_2$	$+ 21H_2O$.

First upon the list, as regards both rapidity of action and efficiency, stands *ammonium carbonate*. By a reference to our table of the possible results of the oxidation of various glucosides and alkaloids it will be seen that theoretically two molecules of ammonium carbonate, by a simple rearrangement of the atoms, without the addition of oxygen, yields three parts of urea, one of carbon dioxide and five of water. As there is no well-established evidence that ammonium carbonate is eliminated in the urine, perspiration or breath in a proportion approximating that in which it is administered, it seems rational to suppose that it passes through a series of changes within the system and makes its final exit from the body in the form of the excrementitious products enumerated. While undergoing this transition within the animal economy, it evolves energy that increases both the force and length of the systole. At the same time, it tends to regulate the cardiac rhythm and arterial tone, not producing decidedly high tension or abnormally rapid circulation. If, with this improved circulatory condition, together with the fact that the nutritive interchange is not arrested, a liberal allowance of proteids is digested and assimilated, and fats, sugars and starch abstained from, a permanent compensatory hypertrophy can rapidly be developed, fully neutralizing any functional and organic defect of a mechanical nature that may have been present.

Owing, however, to the irritating properties of ammonium and its salts, the remedy must not be pushed beyond a certain limit; neither should it be continued for too long a time. Ammonium is particularly adapted for immediate and temporary use, and when a powerful result is wanted at once. Like all nitrogenous compounds, if taken in too large quantities, it may be imperfectly transformed, with the production of poisonous compounds and disastrous consequences.

Five grains of ammonium carbonate, administered every two or three hours, will often place a weak and feebly acting heart in an excellent position to appropriate nutriment to its muscle-fibers more rapidly than any other drug at our command, unless it be alcohol. For quick and temporary action ammonia excels even alcohol in effectiveness, but for more continued action alcohol holds first place among the rapid and powerful stimulants. The most satisfactory results are often obtained by alternating the two.

The next best drug in the list of tonics is *coffee* or its alkaloid *caffeine*. This is also one of the CHNO compounds that is capable of being transformed within the system and eliminated as urea, carbon dioxide and water. While this change is taking place, the quantity of oxygen used is comparatively small. Clinical evidence strongly favors the theory that caffeine aids in the formation of the bodily tissues and gland-structures. If it does not absolutely produce new tissue, it has consummate power to intensify tissue, glandular and mental activity, and at the same time retard retrograde proteid-metabolism. It slowly, but steadily increases the force and frequency of the systole, moderately raises general arterial tension, but positively lowers the blood-pressure in the splenic arcade and renal arteries. It thus acts as a most perfect diuretic. As caffeine does not occasion intensely high arterial tension, but provides a steady and uniform vascular tone, it tends to improve the nutritive interchange between the blood in the arterial capillaries and the perivascular tissues. About three grains of caffeine, three or four times a day, are usually all that is required, and often smaller doses will answer every purpose.

What has been said of caffeine applies in most respects with equal force to *opium* and its alkaloid *morphine*. The latter, however, stimulates the heart the more powerfully, according to the quantity taken; it also has the peculiar property of raising the arterial tension when low and of depressing it when unusually high, in the same manner as alcohol. Were it not for the disturbing effects of opium upon the digestive functions and the action of the liver, no better cardiac stimulant and tonic could be found. So far as the heart and vascular tone are concerned, the action of opium is all that could be desired.

That morphine is oxidized and split up within the

system and escapes in some other form, possibly as urea, carbon dioxide and water, is supported by an abundance of clinical evidence. As, for instance, in those addicted to the habitual use of large doses of morphine, in whom there is no question as to the system being fully under the influences of opium and its alkaloid, careful examination of the urine fails to detect the presence of even the smallest quantity of morphine.

That morphine serves the purpose of a proteid food seems clearly established by the fact that confirmed opium-eaters, for years at a time, subsist almost exclusively upon the drug. In one instance of which I know, the patient lived to be over a hundred years old. This clinical phenomenon of individuals living almost exclusively upon opium was for a long time difficult of comprehension; but when it was recognized that theoretically morphine can be transformed into urea, carbon dioxide and water, that when taken in large quantities it cannot be found in the urine, or at least not in proportion to the amount ingested, nor in the other excretions, together with the clinical evidence that life may for years be almost exclusively (though but poorly) supported by opium, it was understood how morphine helps to build up the tissues and glandular structures, or helps to replace the worn-out protoplasmic elements of the body. If we do not admit this property, we are compelled to assume that in the absence of nutritive elements morphine has an enormous power to stay retrograde metamorphosis and sustain the vital forces in a most extraordinary manner. That morphine, even at its best, is a poor food-stuff must be admitted, and it should be employed only as a medicinal agent in cases of emergency; even then great care should be exercised in its use.

Strychnine and *atropine*, like caffeine and morphine, are of CHNO composition. They also are capable of being converted by oxidization into urea, carbon dioxide and water. While they are thus being converted within the system, they improve nutrition, and stimulate the force and nutritive vitality of the heart-muscle. They favorably modify the vascular tension and develop the highest type of nutritive interchange between the blood within the arterial capillary area and the adjacent perivascular tissues throughout the body.

A uniform cardiac rhythm and a normal vascular tone being absolutely essential for the most perfect nutritive interchange, a similar or slightly augmented action of the heart and a uniformly sustained circulation of a large volume of blood in the arterial capillaries is absolutely indispensable for the development and maintenance of a compensatory hypertrophy, to offset the mechanical defect or to remove the functional irregularity of the heart.

This last class of drugs, called tonics, is found to be the most serviceable for the accomplishment of this desirable result.

Ammonium carbonate for immediate action, followed by the judicious use of alcohol and a well-selected proteid diet, will quickly regulate the cardiac rhythm, steady the vascular tone and augment the nutritive function, not only of the heart-muscle, but of all the tissues and glands of the body.

For a more permanent action and for the development of a lasting compensatory hypertrophy of the muscular fibers of the heart-walls the following formula has been largely used at my clinic and in private practice, and has thus far yielded most satisfactory results:

℞.—Tr. belladonnæ . . . f℥ij–iij.
Tr. opii deod. . . . f℥ij–iv.
Tr. nucis vomicæ . . . f℥iv–vi.
Tr. gentian. co. . q. s. ad f℥iij.
Sig.: f℥j every four hours.

With this combination and line of treatment, a permanently sustained and fully compensatory hypertrophy has been repeatedly established in the patients who have during the past five or six years come to my clinic for treatment. We have frequently pushed the digitalis and continued its use as long as the safety of the patient would admit, but in every instance the heart-muscle deteriorated under its continued administration. With the cardiac tonics, and especially this formula, the desired result could be obtained, even after the damaging effects of digitalis had been produced.

CLINICAL MEMORANDUM.

COMPLETE OUTWARD DISLOCATION OF THE RADIUS AND ULNA AT THE ELBOW.

BY C. R. PONTIUS, M.D.,
OF FREMONT, OHIO.

READING the report of the case published by Dr. Isham, of Cincinnati, in THE MEDICAL NEWS of July 11th, induces me to report my own case of complete lateral external luxation of the elbow-joint. This makes the twelfth, I believe, put on record in America.

The accident is certainly very rare, because Gross says: "The only instance of complete lateral dislocation of the elbow with which I am acquainted is one recorded by Nélaton."

August 18, 1889, F. S., a boy about fourteen years of age, while attempting to perform some feats on a horizontal bar suspended eight or ten feet from the ground, lost his balance, fell, and was picked up with a badly injured right elbow-joint. I examined the joint within one hour after the accident, and found the following conditions existing:

The olecranon of the ulna resting against the external surface of the external condyle of the humerus; the head of radius carried externally, but resting on the coronoid process of the ulna, the arm being slightly flexed, and pronated but little. The joint was necessarily considerably widened, with a corresponding diminution of the antero-posterior diameter. The ligaments of the joint seemed to be, and necessarily were, torn very badly. The joint was badly swollen, and the patient was suffering intensely. A bystander supported the humerus, and I grasped the bones of the forearm near the elbow-joint, using my hand as a fulcrum; holding the wrist with my other hand, I carried the ulna into its proper anatomical position, after which I returned the head of the radius to its normal position, and applied heavy sole-leather splints, properly padded, leaving the arm in a semi-flexed position, and ordered the almost constant application of cold water to the arm.

This was a severe injury, and I had but slight hope of

anything better than an ankylosed joint. In a few days the swelling lessened, and I instituted passive motion as early as I possibly could with safety, thus hoping to avoid the results that I feared. Convalescence was normal. He now has fair use of the arm, with a very good degree of flexion and extension, though neither function is perfect. Rotation is normal. He drives a dray, and has no difficulty in following his vocation.

NEW INSTRUMENTS.

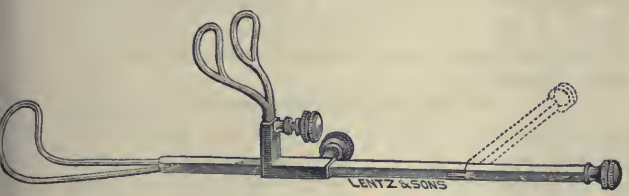
A SELF-RETAINING PALATE RETRACTOR.

BY T. H. WEAGLY, M.D.,
OF MARION, PA.

FOR the thorough examination of the post-nasal cavity, and for the various operations therein, such as the removal of adenoid tissue, galvano-cauterizations, and snaring of hypertrophied turbinates, the need of an effective, self-retaining palate retractor has long been recognized both by surgeon and specialist.

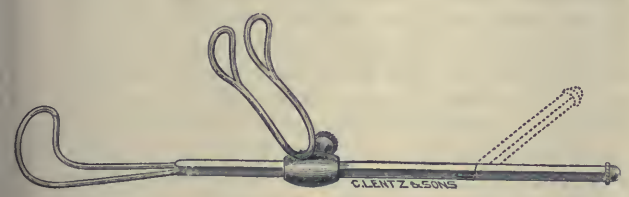
To meet this want the White Retractor, shown in Fig. 2, was brought out. It consists of a bar terminating in a wire loop of sufficient strength to hold the

FIG. 1.



Weagly's Retractor.

FIG. 2.



White's Retractor.

palate. On the bar slides an attachment intended to clamp the upper lip and thus be retained. My experience with the instrument thus formed has convinced me that for several reasons it fails to fulfil its purpose. In persons with a receding lip, or those wearing an artificial denture, it is almost impossible to secure it at all, and in many other cases, at the critical moment of making an application or operating, it is liable to drop from its position, causing great annoyance; and in cases in which it is retained, it often requires such firm adaptation that the undue traction upon the post-nasal parts gives rise to considerable irritation.

In order to secure absolute self-retention, adaptation to varying length of lips, and avoid undesirable traction upon the post-nasal parts, I have modified the lip-clamp, as shown in Fig. 1, by lengthening the clamps and curving them backward. The fenestra are made narrow, and intended to hook within the tip of the nostrils instead of resting against the lip. A pocket with set-screw on the sliding nut permits the adjustment of the shaft of the clamp to the different forms and lengths of lip.

The instrument is, in reality, suspended from the tip of the floor of the nostrils; no undue traction upon the post-nasal parts is required, while absolute self-retention for all purposes is secured.

CURRENT LITERATURE.

THE ACCIDENTS AND SEQUELÆ OF THORACENTESIS.

POTAIN describes the accidents that may be observed after thoracentesis. They may be due (1) *To the pulmonary congestion* that follows the removal of the fluid, and is accompanied by an abundant, albuminous, bronchial expectoration. This bronchial hypersecretion is a result of the entrance of air into the bronchial tubes, which are unaccustomed to this abnormal irritation, and is not dependent upon distention of the lung. In the case of pleuro-bronchial fistula, when the air enters readily, the lung does not undergo distention; nevertheless, albuminous expectoration is at times observed after thoracentesis. (2) *To syncope.* When, for any reason, syncope is feared, special precautions should be taken to slowly remove only a small portion of the fluid. The patient should be operated on in the horizontal position. After the operation he should be kept in absolute repose. (3) *To embolism*, caused by clots from the pulmonary veins. The heart may be arrested, or the emboli may be carried into the large arteries of the brain, giving rise to hemiplegia; into the small cerebral arteries, occasioning abscess; or into other arteries, forming infarcts. Embolism of the pulmonary artery has been observed. When the action of the heart has been hampered by a large effusion, the pressure exerted upon the auricles, the torsion or the compression of the pulmonary veins, conjoined with a certain degree of irritation of the endocardium, may determine coagulation of blood within the heart. After thoracentesis, as soon as the blood-current is normally reëstablished, fragments of the clot may be detached and propelled into the pulmonary artery. Finally, patients, especially advanced in years, may succumb to *cardiac weakness.* When the circulation becomes easier the heart is unable to propel the increased volume of blood, and it ceases to act.

The accidents consecutive to thoracentesis are not rare, although their frequency is not great. An important factor is the quantity of fluid removed. The operation should not be too contracted. It suffices to withdraw one-half of the fluid, which should be allowed to escape slowly, simply by its own pressure. The forced expiration, consequent upon the cough induced by the escape of the liquid, increases the rapidity of the flow. It is the habit of some operators, when the liquid does not readily flow, to encourage the patient to cough. Such a procedure is not unattended with danger.

The frequent transformation of serous into purulent fluid must be related to the apparatus employed in the operation. This accident may be prevented by perfect asepsis. When the period for these accidents has passed, the ultimate prognosis will vary with the age of the effusion and the degree of compression to which the

lung has been subjected. In the case of recent and moderate effusions the pulmonary expansion is readily restored; this often happens in the course of the operation. Under other circumstances no change can be detected by percussion or auscultation in the course of the operation. It may be that the level of the fluid has not been altered, or the lung may not have expanded at once because of a condition of atelectasis. In such a case, while at first there may be no modification, on the next day it will be noticed that the dulness has disappeared. In other cases the lung expands rapidly, the pulmonary resonance and the vesicular murmur return, but on the following day the percussion dulness and the absence of the vesicular murmur reappear. The fluid has not been reproduced with prodigious rapidity. There is simply congestion of the lung, which has come about progressively and slowly, without the usual accompaniment of bronchial hypersecretion.

Should the bronchial hypersecretion be profuse and threatening, the sovereign remedy is morphine, subcutaneously. This arrests both cough and expectoration. For the intense congestion, dry cups and scarifications; very exceptionally, wet cups will be of service.

The changes that take place in the level of the fluid vary and are not always evident. The rapid expansion of the lung may displace the fluid that remains and cause it to appear at a higher level. On the other hand, in case of rapid decongestion of the lung, the level of the fluid may fall rapidly to the lowest portion of the pleural cavity. Sometimes the level of the effusion falls progressively. This is the most fortunate course. In other cases the level of the fluid remains nearly stationary for an indefinite period. Indeed, when the effusion has existed for a long time, the pleura becomes accustomed to the condition; therefore, an effusion should not be permitted to remain in the pleural sac longer than three weeks.

Finally, the fluid may reaccumulate. This is most apt to take place when efforts have been made to remove all of the fluid. In such cases dry cupping and scarifications, blistering and diuretics should be employed; but digitalis should not be administered. In subacute cases purgatives and diuretics (nitre and acetate of potash) should be given. A treatment worthy of consideration is that with sodium chloride. The patient should be placed on a dry diet, and the chloride of sodium administered every two hours in teaspoonful doses. By this means, a considerable increase in the quantity of urine is obtained, with a return of the appetite and the bodily forces, and a rapid absorption of the fluid.—*La Médecine Moderne*, No. 11, 1891.

TREATMENT OF EPILEPSY BY THE COMBINED EMPLOYMENT OF THE BROMIDES AND AN ORGANIC AGENT CAPABLE OF PRODUCING AN ANEMIC CONDITION OF THE NERVOUS CENTERS.

POULET calls attention to the many cases of epilepsy that are rebellious to the isolated action of the bromides. Notably in small children, the bromides administered alone are generally inefficacious. A large number of epileptic adults are no less refractory to the action of the bromides. In other cases these inorganic salts are poorly borne in the large doses in which it becomes necessary to administer them. Under these diverse circumstances good results may be obtained by associating certain organic agents with the bromides. It is to the cerebral ischemia produced by the bromides that their efficiency is due in the neuroses with congestion of the nervous centers, such as epilepsy and eclampsia. The organic agents that are useful in epilepsy act in the same manner upon the capillary circulation. Foremost among these is Calabar bean or its active principle, the sulphate of eserine. Then come picrotoxin and belladonna or the sulphate of atropine. Finally, digitalis meets certain particular indications.

According to the researches of M. Martin-Damourette, eserine determines two antagonistic effects: convulsions, by over-excitation of the motor centers, and paralysis, by a diminution of the excitability of the motor nerves. Large doses kill by over-excitation of the bulbo-spinal apparatus, with resulting convulsive asphyxia, before the function of the motor nerves becomes depressed in a degree sufficient to cause an antagonism to this over-activity of the centers. Small, fractional doses of eserine, on the contrary, suffice to paralyze the motor nerves without producing over-excitation of the nervous centers; once in this state of neuro-paralysis, the animal tolerates even toxic doses of eserine. If fractional or paralyzing doses of eserine are thus antidotal to massive, toxic, convulsive doses, they will also be antidotal to epileptic convulsions.

Atropine exercises upon the muscles effects similar to those of eserine. This is the reason for its efficacy in certain cases of epilepsy. It must be borne in mind that it is necessary to avoid giving belladonna or daturine to patients who are taking eserine. In truth, if eserine and atropine are given in doses non-toxic, but large enough to develop convulsive action, their spasmodic effects unite, and death follows from convulsive asphyxia. If these two agents are given in doses much less than the toxic dose of each, the hypokinetic effects are added to each other, and death follows by paralytic asphyxia. Finally, if the dose of atropine be too small, it will only develop neuro-paralysis sufficient to overcome the convulsibility that would be produced by fatal doses of eserine. One then realizes the antidotism of Fraser.

Side by side with Calabar bean and belladonna, in their anti-epileptic influence, may be placed picrotoxin. This latter, which is neither an alkaloid nor a glucoside, but a neutral principle, also exerts a different action according to the doses administered. In his *Traité de Toxicologie*, Orfila has well described the accidents occasioned by large doses. They are veritable epileptiform crises, with ocular congestion, lividity of the tongue, foaming at the mouth, general insensibility, and convulsions. According to Cayrade, picrotoxin in large doses determines insensibility and tetanic convulsions analogous to those of strychnine. The spasm, however, does not involve the extensors, but the body retains the attitude which it assumed at the onset of the toxic action—in other words, strychnine is tetanic in action and picrotoxin cataleptic. According to Pereira, picrotoxin in moderate doses has a depressing effect upon the voluntary muscles, occasioning obstinate difficulty of movement.

In small children, in whom the bromides alone are often but slightly efficacious in arresting epileptic con-

vulsions, one may associate with them indifferently, picrotoxin, atropine, or eserine. The combination acts surely, with brilliant results. Poulet has, with gratifying success, employed these organic agents in combination with the bromides in a large number of cases of epilepsy in both children and adults. He reports the case of a man, fifty years old, in which bromide of potassium in combination with picrotoxin and bromide of arsenic failed, while complete success followed the substitution of Calabar bean for picrotoxin. In a young woman twenty-one years old, the bromides alone and associated with picrotoxin failed to check the convulsions. Success followed, however, on associating with the bromide of potassium a preparation of Calabar bean or its active principle. In a woman fifty-three years old, after failure with the use of the bromides in various combinations, as well as with Calabar bean and with picrotoxin, the paroxysms were arrested by the administration of the sulphate of atropine associated with the bromide of potassium. A case of cardiac epilepsy was relieved by the combined action of bromide of potassium and digitalis. Poulet believes that the tendency to crime seen in certain epileptics as the fatal consequence of their malady, may be efficaciously combated by the medication suggested. It is necessary to determine which of the organic agents should, in a given case, be preferred. The state of the pupil will, at times, guide in the choice. If, as frequently happens, the pupils do not furnish any positive indication, the selection of the remedy must be governed by the effects produced.

The doses of the drugs will vary according to the age of the patient, individual idiosyncrasy, and the intensity of the disease. In adults, generally from 75 to 90 grains of bromide of potassium for a woman, and from 105 to 120 grains for a man, may be given daily. With this may be given ⅙ of a grain of sulphate of eserine, or ⅙ of a grain of picrotoxin, or $\frac{1}{65}$ of a grain of sulphate of atropine. Thirty drops of the tincture of Calabar bean or 12 grains of the crude drug in powder may be substituted for the eserine, and 30 drops of the tincture of belladonna or 7½ grains of the powdered root for the atropine. If the patient is a cardiac epileptic, and digitalis is preferred, 20 to 30 drops of the tincture, or 3 or 4 grains of the powdered digitalis may be given. The drugs should be given before or during meals.—*Bulletin Général de Thérapeutique*, No. 10, 1891.

POISONING FROM THE EXTERNAL USE OF TOBACCO.

TOBACCO has not been long employed therapeutically save as a domestic remedy. AUCHÉ (*Jour. de Méd. de Bordeaux*, No. 34, 1891) describes various forms in which tobacco has been topically applied, and the toxic symptoms that frequently follow such applications. Tobacco may be employed in the leaf, green or dry, in powder, in decoction, in maceration, in the forms of juice from the stems of pipes, or in vapor. All of these modes of employment have in some cases occasioned toxic phenomena. Two such cases of the enployment of tobacco leaves have been cited by Gallavardin. In the first, in a woman, fifty years old, the external application of the leaves was followed by nausea, vomiting, hiccough, paroxysms of suffocation, excessive prostration, coldness of the extremities, cold, clammy sweats, and a soft, intermittent pulse. In the second case, in a man, thirty-seven years old, toxic symptoms appeared after the application of dried tobacco leaves mixed with honey. In some instances tobacco has been kept in contact with the surface of the body, not for therapeutic purposes, but in contraband pursuits. Thus, in the observation of Nameas (*Gazette des Hôpitaux*, 1864), a smuggler, who had covered his skin with tobacco leaves to escape the impost, presented extreme weakness of the pulse, cold sweats, depression, etc. Hildenbrand relates that the hussars of a troop who, with fraudulent intent, had enveloped themselves in tobacco leaves, though addicted to smoking, presented vertigo, pains in the head, vomiting, etc.

In other cases, poisoning is produced by the employment of tobacco in powder upon wounds, or following the application of an ointment composed of butter and tobacco, as in the cases reported by Kerkring. Wright has reported (*London Med. Gaz.; Annales de Hygiène pub. et de Méd. lég.*, 1874) the case of a man with hemorrhoids, in whom toxic symptoms appeared after sitting for only a few minutes upon a commode containing some tobacco and burning charcoal. More commonly, the poisoning is occasioned by the employment of the decoction, of the infusion, or of the juice of tobacco. Thus, in the case of Landerer, tobacco juice was applied to a chronic skin-eruption on the neck; in that of Westrumb, frictions of the juice of a pipe were applied to denuded portions of the skin; in that of Waterhall, the morbid symptoms manifested themselves after the application of the juice to a scurfy ulcer.

Mercier (*Bulletin de la Faculté*, 1819) has reported the case of a man with the mange, who, with a decoction of a half-ounce of tobacco, rubbed his limbs and trunk morning and evening, and who, on the second day, presented serious symptoms of poisoning. In the case of Murray, three children with scald-head were seized with vomiting, vertigo, sweating and convulsions after having had their heads bathed with a decoction of tobacco. In the case of Marrigues toxic symptoms appeared after the arms, hands, thighs and calves had been enveloped in linens saturated with a strong hot decoction of tobacco. Stanislaus Martin has related the case of a woodcutter and his wife, both with the mange, who energetically rubbed the entire body with a decoction of tobacco, and were soon seized with troublesome symptoms of tobacco-poisoning. M. Milier (*Bulletin de l'Académie de Médecine*, 1845) has reported that lotions of tobacco, employed formerly in the treatment of mange, at times gave rise to vertigo, pain in the head, colic, etc. M. Rougon (*Société de Médecine publique et de Hygiène professionelle*, 1883) observed analogous symptoms in certain colonies of America where the infusion of tobacco was freely used to destroy the chigoe. The presence of these parasites sometimes gave rise to more or less extensive ulcers of the feet. As an insecticide, infusions of a moderate quantity of tobacco leaves were employed. In some instances M. Rougon observed that the applications of this infusion were followed by diarrhea, vomiting, cold sweats, collapse, etc. Auché himself reports a case of tobacco-poisoning in a man, fifty years old, literally covered with pediculi pubis. Not wishing or daring to seek advice upon the method of freeing himself of

these parasites, he decided to use frictions over his entire body with a decoction of tobacco. Soon there appeared heaviness of the head, nausea, vertigo, dimness of vision, cold sweats, excessive pallor of the skin, trembling, great weakness, etc. From this series of observations, Auché draws the conclusion that the employment of tobacco as an external medicament is not free from danger; that tobacco applied to the skin, denuded or not, is capable of producing phenomena of intoxication similar to those produced by the drug taken in toxic doses internally.

THE EMPLOYMENT OF HYDROCHLORATE OF MORPHINE IN MENTAL AND NERVOUS DISEASES.

VOISIN (*Bulletin Général de Thérapeutique*, No. 14, 1891) claims that morphine is of great service in the treatment of certain neuro-mental affections. It is a sedative in the neuralgias, for pain, and for the centers of perception; by this last action it diminishes the sensibility of the brain to painful impressions. It acts efficaciously upon inertia, insomnia, sensory hyperesthesia, upon peripheral neuralgias, upon illusions and hallucinations, and consequently upon deirium. It is useful in mental affections with depression, or when there exists an anxious state, with moanings and lamentations. Many physicians treat slightingly the complaints of hypochondriacs, without considering that in every hypochondriasis there is an element of pain, an initial cause of complaint, and that the patients have, little by little, come to exaggerate the pains that they at first suffered. The ills of hypochondriasis are not only imaginary—there is an element of actual suffering.

In the treatment of the insane, morphine possesses the great advantage that it may be employed by subcutaneous injection. The adoption of the hypodermatic method of treatment of these patients is due to Erlenmeyer, Béhier and Bourdon, and its employment in mental disorders was first practised by Erlenmeyer, Roller and Krafft-Ebing. Voisin first used the drug in 1867; in the last twenty-four years his confidence in this method of treatment has daily increased. The subjective improvement is most encouraging; the patients state that their pains cease shortly after receiving the injections, that with the renewal of force they feel a renewal of will and energy; they are able to return to their occupations; this beneficial effect persists for several hours. Two injections in twenty-four hours are ordinarily necessary. Voisin always commences treatment with small doses (from gr. $\frac{1}{6^{0}}$ to $\frac{1}{3^{0}}$, increasing the dose gr. $\frac{1}{6^{0}}$ daily). The dose is slowly increased until physiological phenomena of favorable prognosis are observed. The patients who are cured, or the condition of whom is ameliorated by subcutaneous injections of morphine, present at first certain symptoms that subsequently moderate or entirely disappear. Among these are redness of the face and conjunctiva, nausea, vomiting, a sensation of heat, a feeling of humility, excessive fatigue, somnolence, emaciation and loss of weight, lowering of the arterial tension, as revealed by the finger and the sphygmograph; then a brightening of the countenance, with a return of intelligence, a clearing of the complexion, a liveliness of expression, an increase in weight, and in women a restoration of menstruation. The circulation presents evident modifications a little after the injection. The cheeks become quite red, and at times remain so for several hours. The conjunctivæ are strongly injected. The pulse changes notably, becoming full and accelerated.

The indications for the treatment of mental alienation with the hydrochlorate of morphine are especially marked in cases in which the return to health is simple and free from congestive complications. The remedy is useful in cases with hallucinations, in conditions of depression, in cases of anxious melancholia in all the forms of alcoholism, in melancholia either with moaning or with stupor, ecstasy, or suicidal tendency. In hysterical insanity decided success has attended this method of medication. Non-congestive puerperal insanity is also most happily treated in this way. In such cases, with hallucinations and maniacal delirium four to five days after delivery, Voisin has employed doses of a grain or more daily. The agitation and hallucinations have ceased at the end of six weeks, and sleep has gradually returned. In one case the patient was cured at the end of two and a half months, and has remained so since. In all the cases in which this method of treatment is adopted, a previous examination of the urine should be made to ascertain the absence or presence of any renal affection with which the hypodermatic medication of morphine would be incompatible.

The duration of the influence of the morphine upon the insane varies according to the degree and the variety of the mental disorder. In tranquil patients, such as certain melancholiacs, or some monomaniacs, the influence lasts nearly twenty-four hours; in maniacal patients with hallucinations and in agitated melancholiacs the duration of the influence, as a rule, does not exceed eight hours, and never reaches twenty hours. This is is also true of agitated hysterical patients. If it is desired to cure or ameliorate the condition, it is necessary to reinforce the morning injection with another in the afternoon, and sometimes with a third later in the day. The last two doses should be larger than the morning dose.

There are certain contra-indications to this method of treatment: (1) Insane patients in whom the lesions are inflammatory, either primarily or secondarily to lesions of the nervous centers, with epileptic insanity, or with any form of general paralysis, are made worse by opium medication; an error of diagnosis may be fatal to the patient. (2) Morphine is of no utility in insanity associated with arterial atheroma, and it may be harmful on account of the congestion to which it gives rise—as a result of which hemorrhages from vascular rupture may take place. The diagnosis of the anatomical nature of the insanity is of the greatest importance. The treatment of congestive or inflammatory insanity in this way is carefully to be guarded against.

Peculiar idiosyncrasies are sometimes encountered in the administration of morphine; some insane patients will receive considerable doses of the drug without manifesting any physiological effect, while others will not tolerate the smallest test dose.

Robert Koch has been made director of the Institute for Infectious Diseases and honorary professor in the medical faculty of the Friedrich-Wilhelm University of Berlin.

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SATURDAY, SEPTEMBER 5, 1891.

THE SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THERE seems to be a general unanimity of opinion that the London meeting of the Seventh International Congress of Hygiene has been an unqualified success. There was a pleasant mixture of so-called popular and of scientific topics, and certainly no one could complain of any severe limitation of choice. Only those possessing the gift of ubiquity could have managed to do anything like justice to the variety presented in the different sections of State Hygiene; Preventive Medicine; Infancy, Childhood, and School Life; Chemistry and Physics; Architecture in its Relation to Hygiene; Engineering in its relation to Hygiene; State Hygiene; and, finally, of Demography. The professors who had, so to speak, the title *rôle* to support, played their parts to perfection. One of them, with substantial as well as etymological accuracy, defined demography as "a method of drawing the public." But the more abstruse departments had also their lighter sides. The science of public health is, no doubt, only another name for an inquiry into the causes of disease, general and specific. But even epidemics, in virtue of their terrors, have a fascination for many minds, while a more wholesome interest will find abundant material in following speculations and suggestions that minister to a better physique; in other words, to the greater capacity of the masses for enjoyment. At first sight there is something gruesome in the catalogue of perils against which it is the object of sanitary science to protect the community. The PRINCE OF WALES, in his inaugural address, spoke the thoughts of many when he observed that "as one looked through the program it was impossible not to feel distress, and even horror, at the multitude of dangers in the midst of which we have to live." But he gave the needed consolation when he added that the great majority of these risks may, with due care, be averted.

The proceedings were naturally concerned much less with what has been already done than with what remains to be achieved. Knowledge in the abstract was not the goal of effort, but knowledge that could practically help mankind. There would be little use in compiling statistics about diphtheria, if the comparison of data thus obtained did not help us to discover the cause of the scourge. In such cases the study of causes is the first step toward that best form of cure—prevention. As yet, the most eminent experts must be content to go on patiently and indefatigably in the road of inquiry, sustained by the hope that, in the end, the mystery will yield to the genius of statistical research. It would have been welcome news had DR. SEATON announced that he and his fellow-laborers in this field had solved the problem; but he did the next best thing when he induced the Congress to pass a resolution calling on the European governments to set on foot a comprehensive inquiry. If the project of international conferences needed justification, it would be found in the necessity for world-wide coöperation in tracking to their origin the more subtle shapes of infectious maladies. India, that in so many other departments of human energy has served to enlighten the West, has been represented at the Congress, and we have no doubt that the attention paid to the Anglo-Indian observers will encourage many a young member of the medical department to make the most of the rare opportunities that his service in that cradle of epidemics gives him. The great Continental specialists who graced the Congress with their presence, and, in many instances, enriched the records of the proceedings with their remarks, may be trusted to do all that the laboratory and the hospitals will permit. But the battle with disease is essentially a soldier's battle. The discussion in the section of bacteriology as to the possibility of the transmission of tuberculosis to the human subject

by the medium of meat or milk as articles of diet, was not, it must be owned, appetizing. But, taking it altogether, it was reassuring, since it showed, on the one hand, that the risk is far slighter than the professional panic-monger would have us believe; and, on the other, it suggested certain practical precautions. It is in the investigation of such subjects as this that the necessity of tempering the results of physiological research and experiment with due regard for the facts and the conditions of every-day life becomes apparent. PROFESSOR BURDON-SANDERSON, for instance, while recognizing that there is a certain degree of danger in the supply of tuberculous meat, added that, if to-morrow a law were passed forbidding its sale, it could not be put into force, because of the difficulty of obtaining inspectors with sufficient skill and discernment. The reflection has a moral that may be carried far beyond the sphere of State medicine. As PROFESSOR BANG, of Copenhagen, recommended, the proper thing to do is to discourage the consumption of under-cooked meat. When doctors differ, a very simple sanitary code is very often the best concordat.

Topics, we need hardly say, vastly more intelligible than those to which we have referred, and no whit less important, engaged the attention of several of the sections. The chemists, it is gratifying to hear, hold that the smoke nuisance is amenable to treatment, and urge the authorities to address themselves practically to its abatement. It will, possibly, be a surprise to some, and a matter of regret to others, that the section of State Hygiene passed resolutions declaring that cremation is a rational and hygienic procedure that is especially called for where death occurs from contagious diseases, and urging the various governments to remove all legislative obstacles to the practice. To legalize is, of course, not necessarily to approve; but the considerations adduced by SIR HENRY THOMPSON undoubtedly went far to show that any other means of disposing of the dead, save burning, may frequently be the means of propagating disease. It may be hinted, however, that the decisions of the Congress of Hygienists, like those of the congress of trades unionists, do not always express the mature and impartial view of the whole memberhood.

On the vexed question whether under any circumstances and in any quantity, alcohol is bad for people of ordinary constitutions, there was by no means unanimity. Moderation approaching abstinence was, indeed, generally commended; but, while DR. ISAMBARD OWEN took up his parable boldly in favor of teetotalism as consistent with perfect health, others were found to plead that a little good wine or beer, or even spirits, taken regularly at meal-times, and always in modest quantities, tends to physical well-being as well as to comfort. Probably, in this conflict of authorities, the outer world will go on doing what it most likes. There is a sort of uncomplimentary concession to the weakness of the flesh in the theory put forward that, as most of us come of ancestors that drank, we should be well advised not to revert rashly to a more innocent regimen.

Everything in these days leads up to socialistic politics, and no one ought to be disappointed if, on such subjects as dinners to under-fed children at elementary schools, the application of scientific principles failed to secure unanimity of belief. There was more thoroughness than wisdom in the suggestion that poor parents should be sternly prohibited by statute from allowing their sons and daughters to sleep in the same room with themselves, and that, if poverty prevented them from providing ample and decent accommodation, the State should step in with the necessary allowance.

More cognate, perhaps, to the legitimate functions of the Congress were the striking reflections offered at an earlier sitting by MR. GALTON as to the law of population. There is certainly novelty in the suggestion that population does not necessarily and indefinitely tend to increase in civilized societies. The question lies at the root of nearly all political and socialistic speculations of the time, and it is to be hoped that when next the experts in demography assemble they will be in a position to elucidate what is still obscure in this important branch of statistical information.

SOCIETY PROCEEDINGS.

SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

Held at London, August 10 to 17, 1891.

THE Congress was opened by the PRINCE OF WALES, who delivered the Inaugural Address.

DR. BROUARDEL responded on behalf of the French delegates, DR. VON COLER on behalf of the Prussian, DR. CONRADI on behalf of the Italian, DR. ROTH on behalf of the German, and DR. KOROSI on behalf of the Austro-Hungarian.

In the Section of Preventive Medicine, SIR JOSEPH FAYRER delivered the President's Address. He devoted

himself to a consideration of the present aspects of preventive medicine, its recent development, how much it has operated and is now operating for the public good, how slowly but surely it is dispelling the cloud of ignorance and prejudice that has overshadowed and impeded the progress of sanitation, and how it is gradually imbuing the public mind with the conviction that prevention is better and often easier than cure, that health may be preserved, disease avoided, and life prolonged by the study and observance of certain well-known laws, which, correlating the individual with his surroundings, determine his well-being when conformed to, deteriorate or prevent it when neglected, and should enforce the maxim, *Venienti occurrite morbo*.

It is now pretty generally understood that about one-fourth of all the mortality in England is caused by preventable disease, that the death-rate of large communities may be reduced much below that at which it has been wont to stand, that the average duration of life may be made to approximate more nearly to the allotted four-score, and that the conditions of living may be greatly ameliorated. The chief obstacles to improvement have been ignorance and want of belief; a better knowledge of the laws of life and health, more rational comprehension of the nature and causes of disease, are gradually but surely entailing improvement in the conditions of living and in the value of life, and the diminution and mitigation, if not extinction, of morbid conditions which have in past times proved so injurious or destructive to life.

Great improvements have gradually been made in the mode of living. The houses are better constructed, the drainage and ventilation are more complete, the land is better cultivated, and the subsoil better drained; marsh fever and dysentery, at one period so rife, are unknown, and leprosy has long since disappeared. The death-rate is considerably reduced, and the expectancy of life enhanced. Water is purer, food is more varied and nutritious, clothing is better adapted to the climate, the noxious character of many occupations has been mitigated, and the mental, moral, and physical aspects of the people altogether improved; education is general, a better form of government prevails, and the social conditions are far in advance of what they have been; but still the state of our cities shows that improvement is demanded, and one object of this Congress is to point out why and how this may be effected, not only in this country, but throughout the world.

Preventable disease still kills yearly about 125,000, and considering the large number of cases for every death, it has been calculated that 78¼ millions of days of labor are lost annually, which means $38,750,000 per annum; this does not include the days lost by the exhaustion so often induced by the still too numerous unhealthy houses of the poor.

Towns, villages, and houses are still built in an insanitary way; the death-rate is still higher, and the expectancy of life lower than it should be, and though we have got rid of the terrible plagues of the Middle Ages, yet in this century, now closing, other epidemics have made their appearance: cholera has four times visited us; fevers, eruptive diseases, and diphtheria have prevailed; influenza has appeared several times, even recently, and after leaving us last year only to return with renewed virulence, caused in the United States a mortality almost equal to that of the plague.

That we can exterminate zymotic disease altogether is not to be expected, but there cannot be a doubt that we may diminish its incidence, and though we may never be able to reach the *fons et origo mali*, yet we can make the soil upon which the seed is sown so inhospitable as to render it sterile.

The scope and objects of preventive medicine are not limited to the removing of conditions which give rise to zymotic disease, nor even of those which compromise otherwise the physical welfare of mankind, but should extend as well to a consideration of the best means of controlling or obviating those which, attending the strain and struggle for existence, involve over-competition in various occupations, whether political, professional, or mercantile, by which wealth or fame is acquired or even a bare livelihood is obtained, and under the pressure of which so many succumb, if not from complete mental alienation, from breakdown and exhaustion of the nervous system, which give rise to many forms of neurotic disease, and add largely to the numbers of those laid aside and rendered unfitted to take their due share in the natural and inevitable struggle for existence.

The possible deleterious influence of mistaken notions of education, as evinced in the over-pressure which is exercised upon the young, the predominance of examinations, their increasing multiplication and severity, and the encouragement of the idea that they are the best test of knowledge, whilst true mental culture is in danger of being neglected, and physical training, if not ignored, left so much to individual inclination—this is another subject which demands the jealous scrutiny of preventive medicine, the duty of which it is to safeguard the human race from all avoidable causes of either physical or mental disease.

The records of the last fifty years prove the influence exerted by sanitary measures on vital statistics. From 1838 to 1854 the expectancy of life was for males 39.91, for females 41.85 years; from 1871 to 1880 it had increased to 41.35 and 44.66 years respectively.

The improved sanitation saves more children's lives, but the conditions of gaining a living are harder than they were, which accounts for the expectancy of life for adult men being less.

A further proof of the effects of sanitary work is a decreased death-rate.

An important result of the observations of the able medical officers of the Sanitary service of India has been to show that cholera is to be prevented or diminished by sanitary proceedings alone, and that all coercive measures of quarantine or forcible isolation are futile and hurtful.

In preventive, as in curative medicine, knowledge of causation is essential. It is obvious that any rational system of proceeding must have this for its basis. A certain empirical knowledge may be useful as a guide, but no real advance can be expected without the exactitude which results from careful scientific observation and induction. The spirit of experimental research, however, is now dominant, and progress is inevitable.

It is impossible to exaggerate the value of the scientific researches which have led to the antiseptic methods of preventing the morbific action of microörganic life, whether the toxic effects produced by them, or those

induced autogenetically in the individual. Theory has here been closely followed by its practical application in prevention and treatment of disease, whilst the study of bacteriology, which is of such remarkable preëminence at the present time, is opening out sources from which may flow results of incalculable importance in their bearing on life and health.

Important as are the researches into microbiology, there are other factors to reckon with before we can hope to gain a knowledge of the ultimate causation of disease. It is not by any one path, however closely or carefully it may be followed, that we shall arrive at a full comprehension of all that is concerned in its etiology and prevention, for there are many conditions, dynamical and material, around and within us, which have to be considered in their mutual relations and bearings before we can hope to do so; still we may feel satisfied that the causes of disease are now being more thoroughly sought out than they ever have been—all honor to those who are prosecuting the research so vigorously—and that though individual predilection may seem sometimes to dwell too exclusively on specific objects, yet the tendency is to investigate everything that bears upon the subject, and to emphasize all that is implied in the aphorism, *Salus populi suprema lex.*

A discussion was held on the "Mode of Preventing the Spread of Epidemic Disease from One Country to Another."

In the Section of Bacteriology, SIR JOSEPH LISTER delivered the Presidential Address. He paid a graceful tribute to the work of Pasteur and of Koch, and made brief reference to the work of Roux in diphtheria; of Metschnikoff in phagocytosis; of Behring and Kitasato in tetanus; of Hankin, and of Vaillard and Yersin.

DR. A. LAVERAN discussed the Etiology of Malaria. He described the chief forms of the hematozoön found in malaria as:

1. The spherical bodies. 2. The flagella. 3. The cruciform bodies. 4. The rosette-like bodies. The flagella could only be demonstrated in fresh blood; the other forms, however, were well seen in preserved blood. The blood in paludism was easily studied by rapid drying and fixation of the specimen by heat, followed by staining with a concentrated solution of methyl-blue or gentian-violet; a double staining could be effected by successively immersing the specimen of dried blood in concentrated aqueous solutions of eosin and of methyl-blue, whereby the red cells assumed a rosy hue, and the leucocytes, together with the parasitic bodies, were colored blue. Nuclei had been observed in both the spherical and the cruciform bodies. Two, and even three, different varieties of this hematozoön had been described (polymorphism). Similar hematozoa had been found in different animals—frogs, lizards, marsh-tortoises, birds. In many species of birds there was to be found a hematozoön so similar to that of paludism that most observers regarded the two forms as identical. The similarity was very marked, yet several points of difference existed; thus—in the blood of birds the cruciform bodies were not found; the parasitic elements were intra-corpuscular and never became free, as was often the case with the true paludic hematozoön; and the ameboid movements of the spherical bodies were much less notable in the case of the organism found in birds' blood. On the other hand, this latter hematozoön had been observed in birds living in non-marshy regions; it frequently caused no inconvenience to its host, and the inoculation of blood containing this hematozoön had given only negative results.

The subject of "Asiatic Cholera" was taken up.

PROFESSOR HUEPPE gave the result of his observations on the growth of Koch's cholera bacillus in artificial media. He had obtained positive results in his experiments on animals. He also described certain of the chemical changes produced by cholera bacilli in the media in which they grew.

DR. KLEIN did not accept the view that the bacillus described by Koch was the active agent in the production of cholera. He demonstrated the several species of comma bacilli isolated from typical acute cases of cholera by Dr. D. D. Cunningham.

PROFESSOR MAX GRUBER supported Koch's conclusions.

DR. BRUCE said that he had found the injection of a pure cultivation of Koch's bacillus killed guinea-pigs but not rats. He did not agree with Professor Hueppe in thinking that the comma bacilli formed spores. He found that comma bacilli grew well inside of eggs, and would live there longer than anywhere else.

PROFESSOR MILLER read a paper on "The Mouth as a Source of Infection." He enumerated the local and general diseases traced to the action of bacteria in the mouth, described the method of examining saliva for pathogenic bacteria, gave the results of inoculations with the saliva of healthy persons, and discussed prophylactic measures.

MR. HENRY SEWILL read a paper on "The Bacteriology of Dental Caries." He stated that the active agents in caries are acids and microörganisms.

PROFESSOR ALLEN MACFADYEAN presented a communication on "The Behavior of Bacteria in the Small Intestine of Man." He detailed the results of a study of the evacuations through an artificial anus at the termination of the ileum made for the relief of strangulated hernia.

PROFESSOR MAX GRUBER described and demonstrated a new pyogenic microörganism—micromyces Hoffmanni, belonging to the hyphomycetes, which morphologically closely resemble the actinomyces.

PROFESSOR CROOKSHANK read a paper on the "Streptococcus Pyogenes and the Identity of the Streptococcus Pyogenes and the Streptococcus Erysipelatosus."

MR. SAMUEL G. SHATTOCK and MR. CHARLES A. BALLANA read a paper on "Cancer as an Infective Disease." They stated that thus far the cultivation of a microbe of carcinoma had been unsuccessful. The transmission of carcinoma from one species to another had also failed. Numerous reasons were advanced for considering carcinoma as a parasitic disease. It was shown by statistics that carcinoma has become more prevalent.

DR. SHERIDAN DELÉPINE read a paper on "Psorospermosis as a Possible Cause of Epithelial Tumors." He endeavored to show that psorosperms produce tumors similar to papilliferous adenomata. Psorospermoid bodies were found in twenty-two of a large number of epithelial tumors. Definite proofs of the psorospermic nature of the lesions were, however, wanting. Psoro-

sperms from the liver of a rabbit can easily be cultivated in nutrient gelatin or in the clear serum obtained in some of the psorospermial cystic tumors. Dr. Delépine concluded that the bodies found were not true psorosperms.

PROFESSOR SIMON DUPLAY and DR. MAURICE CAZIN reported that they had been unable to find coccidia in carcinomata. They believed the so-called fuchsin bodies to be products of hyaline degeneration, not confined to carcinoma.

PROFESSOR D. J. HAMILTON read a paper on "Bacterial Necrosis of the Liver." The disease has been found in the cow, sheep, donkey, guinea-pig, and badger, and is characterized by rounded or irregularly-shaped deposits in the substance of the liver, deeply or superficially. The masses are hard, as a rule, yellow in color, and resemble neoplasms. Microscopically they are found to be liver-tissue in a state of necrosis, with the outlines of the liver lobules and cells perfectly preserved. The necrosis is evidently not due to interference with the blood-supply. Dense masses of microörganisms, usually bacilli, are found in the portal vein or invading the necrotic mass.

In the Section of the Relations of the Diseases of Animals to those of Man, SIR NIGEL KINGSCOTE delivered the Presidential Address.

DR. E. ROUX read a paper on the "Prevention of Hydrophobia," giving an account of the results obtained at the Pasteur Institute.

DR. GEORGE FLEMING presented a communication on the "Prevention of Rabies in Dogs." He insisted upon the destruction of rabid dogs, the control of ownerless dogs, the utility of muzzling, and the necessity for the taxation and registration of dogs.

DR. J. BARDACH reported the results of the Pasteur method of treatment as carried out during four years at the Bacteriological Institute at Odessa. The results were exceedingly satisfactory and compared favorably with those of other methods of treatment.

DR. HIME stated that those who had studied the Pasteur method were satisfied that it was established upon a scientific basis.

M. NOCARD, of Alfort, mentioned a prophylactic treatment which was applicable to domestic animals, at least to herbivora. M. Galtier had some time ago announced that the injection of rabic virus into the veins of the sheep or the goat did not produce hydrophobia, but rather conferred immunity. He himself had quite recently made a number of experiments, by which he had been able to show—(1) that the intravenous injection of rabic virus would not produce rabies in horses; (2) that if the quantity of virus injected was sufficient, these inoculated equines acquired an immunity against rabies; (3) that it was possible to protect equines inoculated by intra-ocular injection when there were introduced into the veins certain quantities of dilute rabid nervous material. From these experiments he thought it might be hoped that a prophylactic treatment might arise out of the labors of M. Galtier.

DR. C. R. DRYSDALE stated that, having frequently attended the inoculations at the Institut Pasteur, he could speak with the greatest admiration of the immense care and intelligence shown in carrying out the treatment. As to the issues of Pasteur's plan, he considered it now clearly proved that, when only 0.92 per cent. of deaths had occurred after this treatment, as compared with probably more than 20 per cent. in similar cases, it was an indulgence in an improper degree of scepticism any longer to deny the value of the treatment.

DR. OSTERTAG said it had been suggested that the muzzle was ineffectual because cats and wolves carried the disease as well as dogs, but that cases of this sort were rare was proved by the experience of Germany. Since the passage of the laws regulating the contagious diseases of animals, rabies had become a rare disease and only occurred along the French and Russian borders. These laws provided that all mad dogs, and those suspected of rabies, or even of having been bitten, were to be killed, and all dogs and cats within a radius of fifteen miles must be kept in confinement during three months each year. In Berlin all dogs wore muzzles, and a case of hydrophobia had not been reported for ten years. As a result of these laws a Pasteur Institute in Germany was unnecessary.

DR. ELIZABETH BLACKWELL called attention to the suffering of dogs made mad to produce virus; she herself had visited the Pasteur Institute and had seen a series of dogs in the various stages of induced madness.

PROFESSOR PERRONCITO indicated that in the municipality of Turin they had a laboratory for the Pasteur anti-rabic treatment that gave exceedingly good results, as published by the director, and he also mentioned that an experimental inquiry upon the same method of treatment had been commenced in connection with such animals as oxen, horses, etc., with most encouraging results.

(*To be continued.*)

SECOND CONGRESS OF TUBERCULOSIS.

Held in Paris from July 27 to August 2, 1891.

(Continued from p. 252.)

DR. BABES, of Bucharest, presented a communication on "Bacterial Associations in Tuberculosis." He stated that in children he had found that Koch's bacillus was often associated with other varieties of microörganisms. In every case of tuberculosis that he has examined he has found, together with Koch's bacillus, the staphylococcus and the streptococcus. In tuberculous arthritis the microbes of suppuration are always found; in tuberculous ulcerations of mucous membranes the streptococcus is also always present. As to the influence of these microörganisms on the development of Koch's bacillus, Babes is inclined to think that they favor the growth of this particular organism, as is exemplified in the guinea-pig, that suffers from suppuration and becomes more apt to contract tuberculosis; while, on other hand, it is not impossible that the secretions of Koch's bacillus produce a favorable soil or medium of culture for the other organisms. This fact of microbic association being known, therapeutic action ought to be directed to the destruction of the secondary microbes, which are more easily destroyed than Koch's bacillus.

DR. HALLOPEAU, on the other hand, presented a communication on the "Genesis of Tuberculous Suppurations," in which he denied the fact of the intervention of pyogenic microörganisms in all tuberculous suppurations. Cold abscesses, suppurative adenitis, and empyema may be exclusively due to Koch's microbe, the irritation

being inaugurated by the secretions of that particular organism. Hallopeau maintained that even the suppuration of lupus may be exclusively produced by the bacillus tuberculosis. The suppurative effects of the products of Koch's bacillus have even been demonstrated by injections of Koch's fluid, which give rise to suppuration, and it is known that this lymph has been previously sterilized.

DRS. VERNEUIL and BARETTA presented a communication on the "Influence of Microbic Association in the Evolution of Cold Abscesses," in which they endeavored to elucidate the cause of the transformation of a latent cold abscess into an acute one; as a result of their investigations they found that the presence of staphylococci and streptococci was necessary to transform a cold abscess into an acute one. In a cold abscess that manifests acute symptoms, *streptococci are always found*, while the presence of the staphylococcus is exceptional. As to the practical significance of this fact, it is known that if a cold abscess opens spontaneously, without having presented acute inflammatory signs, there remains a fistulous opening that heals with difficulty, the points of the abscess being infiltrated with tubercles; if, however, the abscess opens as the result of an intercurrent acute condition, or after running an acute course has been opened by the surgeon, the question arises, Have the pyogenic microbes any anti-microbic action as regards the bacillus of tuberculosis? MM. Verneuil and Baretta believe in the anti-bacillary action, for they have inoculated animals with inflammatory products obtained from an abscess that was opened after inflammation had taken place, and the result was negative as regards the development of tuberculosis.

M. ARLOING reported having conducted experiments to determine the relative influence of heat as applied to the virus of tuberculosis, and found that when tuberculous virus after being heated was inoculated into animals it occasioned suppuration, while, on the contrary, when the substance had not been heated, tuberculosis manifested itself.

DR. OLLIVIER presented a communication on "Tuberculosis Amongst the Working Classes." He stated that the most important cause of the propagation of tuberculosis is a failure to disinfect the rooms occupied by tuberculous patients.

When a patient amongst the working classes dies, the rooms occupied are given up, and in ninety-nine cases out of a hundred no antiseptic procedures are adopted in connection with the infected rooms. The consequence is, that those who subsequently occupy the same rooms, at the first cold which they may get, develop a chronic bronchitis, the specific character of which soon shows itself—a result of the drying of the tuberculous products expectorated by the former occupants of the room, which float in the air with the dust. As disinfection will never be properly carried out by the very persons concerned, it ought to be applied by sanitary boards in the respective districts, as is the case with cholera, variola, diphtheria, etc.

Several letters were read upon "The Influence of Influenza on Tuberculosis." DR. DUBROUDY, of Hyères, stated that certainly grippe cannot transform itself into tuberculosis if tuberculosis be not present in the system. In regard to the influence of one disease upon the other, several facts are to be considered: the nature and grave character of influenza; the nature and degree of tuberculosis; and, finally, the degree of resistance of the patient. Patients in the third stage of tuberculosis usually die as a result of the disease, while those in the second stage rapidly pass into the third stage and progress to a fatal termination.

PROF. CORNIL, of Paris, presented an interesting communication on "The Suppuration of Tuberculous Lesions." Suppuration is not simply the passage of white blood-corpuscles outside the bloodvessels; between pus and simple inflammatory edema there exists a wide gap, for the pus is made up of dead white blood-corpuscles, while in edema these same corpuscles or leucocytes are living. Pus is certainly the result of the action of certain microbes of great variety and also of certain toxines.

Moreover, pus is accompanied with a more or less extensive destruction of surrounding tissues which must be got rid of, while the leucocytes of simple inflammation play a useful part, since they aid in the reconstruction of the tissues. This explanation was given to show that the inflammatory edema that is consecutive to an injection of Koch's tuberculin, whatever may be the vascular congestion or migration of the corpuscles, does not alone lead to suppuration. In tuberculous lesions of the skin and lungs Dr. Cornil has made many injections of Koch's tuberculin, the doses varying from 0.001 gram to 0.150 and 0.200 gram, without occasioning the development of a single abscess.

Although in several instances M. Hallopeau has found Koch's bacillus alone present—an observation confirmed by Dr. Cornil—still the latter believed that in many cases of glandular and osseous tuberculosis other microbes are present, more especially the staphylococcus, and in rare cases the streptococcus. On the other hand, M. Arloing has observed that suppuration produced by Koch's bacillus was in direct proportiôn to the attenuation of the microbe—a relation that has been demonstrated in the case of other microörganisms Two factors present themselves in this connection—the virus and the medium of culture.

Suppuration may be considered as an evidence of a feeble degree of reaction, due to an attenuation of the microbe, or to the nature of the culture-medium, the reaction produced by some one pathogenic microbe varying not only with the medium on which the organism has been cultivated, but also with the nature of the tissues of the individual. This is exemplified in experiments made by M. Pasteur, who has produced suppuration in guinea-pigs with hens' cholera—suppuration that healed spontaneously. Drs. Cornil and Chantemesse have produced localized abscesses in the guinea-pig and in rabbits with the microbe of the pneumo-enteritis of the hog; while the same pneumococcus that, without causing death, produces an abscess in a guinea-pig, will in from twenty-four to thirty-six hours kill a mouse by acute septicemia.

In regard to suppuration, Prof. Cornil stated that, together with Dr. Babes, he had some years ago produced an encysted abscess in a guinea-pig by means of the bacillus of bird-tuberculosis, to which this animal is refractory. Suppuration is also an evidence of the great resistance of certain tissues to the tubercle-bacillus, as is

exemplified in local tuberculosis, such as tuberculous orchitis, etc. In conclusion Dr. Cornil stated that in regard to suppuration in tuberculous lesions, not only must the degree of virulence of the microbe be considered, but also the nature of the culture-medium, which in this case is constituted by the tissues, or the organism itself.

MM. HALLOPEAU and JEANSELME read a paper on "Researches on the Nature of Erythematous Lupus." The point in question is whether or not lupus is tuberculous. As an illustration he took the case of a man that since youth had had a typical erythematous lupus and also some glandular tuberculosis, and finally died of acute miliary tuberculosis. Inoculations were made to prove the difference between the lesions, and while from the miliary granulations and caseous glands positive results were obtained, from the tissues from the lupus the results were absolutely negative; three guinea-pigs that had been inoculated were found absolutely normal one hundred and ninety days after the inoculation.

From clinical observations it is probable that erythematous lupus is a result of tuberculous infection, and if it is not inoculable in animals it is because the virus has been attenuated; hence the negative result of inoculations cannot be opposed to clinical facts. As Dr. Besnier has stated, the tuberculosis may be so modified in the organism of an animal that it will appear in a non-transmissible form in that culture-medium—the organism.

DR. CAPRET, of Paris, read a paper on "Medicated Air in the Treatment of Pulmonary Phthisis." For the preceding fifteen months he had treated with most favorable results all stages of phthisis with inhalations of compressed air impregnated with creasote. Patients are placed in a compressed-air chamber for four hours; the pressure of the atmosphere is gradually increased by means of a pump the air having been charged with creasote by passing through scraps of wood saturated with creasote, as a result of which the air contains on an average about 0.001 gram of creasote per liter. Within this chamber, in half an hour, one attains a pressure of one and a half atmospheres, which is maintained for three hours; it is then again gradually diminished for another half hour. During such a sitting of four hours the patient has absorbed about four grams of creasote; these séances are repeated daily. Dr. Capret has treated thirty patients, and in all the results obtained were most satisfactory; in six the bacilli disappeared from the sputa.

An interesting communication was presented by DR. L. H. PETIT, in the name of DR. SCHOULL, of Turin, in relation to "The Transmission of Tuberculosis by the Waste of Food Derived from Tuberculous Patients." Two cases were observed that became tuberculous by eating the remains of the food given to a young tuberculous woman. This led Schoull to institute the following experiment: He took three kittens that had been nursed by the same animal; two were fed with the remains of food obtained from tuberculous patients, and both died from a generalized visceral tuberculosis; the third one, that was used as a control-animal, was nourished with the remains of food obtained from non-tuberculous patients, and these presented no trace whatever of tubercular lesions. In a practical point of view, it is a most interesting fact to be known, as in poor families contagion in this way is quite possible.

DR. LESPINE presented a communication on "A Not Yet Well-known Complication of Lupus Vulgaris." The case upon which the report was based was observed in the service of Dr. Leloir. It was one of lupus vulgaris that was suddenly complicated by the appearance of general symptoms of a profound character—a typhoid state, with a rapid rise of the temperature, that in a few days rose to 40° C. (104° F.); at the same time, around the ulceration, phlyctenulæ developed that filled with pus, the ulceration extending as the suppuration increased. Local antiseptic treatment was sufficient to bring about a cessation of almost all the symptoms.

Dr. Leloir emphasized this complication, as it necessitates special therapeutic interference, for while non-ulcerative lupus contains no pyogenic microbes, the ulcerative variety contains many, among others the staphylococci; hence, in such cases, it is easily understood that antiseptic treatment will do more good than anti-tuberculous treatment.

(To be continued.)

CORRESPONDENCE.

LEIPZIG.

The Medical Department of the University—Professor Zweifel—The New Frauen-klinik—Sänger—The Polyklinik.

THIS is one of the most delightful cities, and it seems especially so after a sojourn in Berlin, with its hurrying crowds and almost constant noise. Here are found, comparatively at least, quiet and rest; here one moves in freer space, breathes a purer air, and beholds an ampler sky; there is less hurry, less apparent confusion and fewer confounding noises.

It is needless to say that great historical events belong to this city, and that it contains many localities associated with famous characters or incidents. Here one may see the room in which Napoleon awaited the, to him, disastrous result of the battle between the French troops and the allied armies—the year I will not attempt to give, lest I might go as far astray as the popular novelist, Rudyard Kipling,[1] does in regard to an ophthalmoscopic examination to which his hero is subjected by one of the leading specialists of London. The houses in which Gœthe and Schiller each lived for some years may be seen by the curious, and certainly they will visit the Auerbach cellar, made famous by "Faust," and see the curious paintings of scenes from that work, and examine the memorials of its great author, such as a few books, autographs, locks of hair, etc. An hour may be spent in the market house, one of the largest and most convenient, I think, to be found anywhere, albeit a person comparing the space given up to flowers to that devoted to meat might come to the conclusion that Leipzig people live more on sentiment than they do on animal food.

While my belief is that a physician ought to have a knowledge of something more than medicine, something

[1] The following passage is found in this author's story called The Light that Failed: "The blaze of a gas-microscope in his eyes made him wince."

besides familiarity with diseases and their symptoms, with drugs and their doses, advancing and strengthening his character by a larger culture, including literature, art, philosophy, and history, yet let me come to matters strictly professional. The medical department of Leipzig University has about nine hundred students, and of these probably between two hundred and three hundred will at the same time be engaged in the study of obstetrics and diseases of women; I was at one of Professor Zweifel's clinical lectures, and certainly there were not more than one hundred and thirty students; but the session is just about ending and it is to be supposed that many had gone home. The student, first one, then another, examines the patient, brought in from the ward upon a bed, and, after questioning him, Professor Zweifel corrects his errors if he has made any, and then makes some observations upon diagnosis, treatment, etc. He seems to me one of the best of teachers. In personal appearance he greatly resembles the late Dr. Albert H. Smith—not quite so large nor of so dark a complexion. His position as Professor of Obstetrics and Diseases of Women gives him the control of one hundred beds, and there is no other Professor in this department of the University; he has assistants—some of whom are well known by readers of German contributions to obstetric or gynecological literature, Döderlein for example—assistants only, not petty competitors and attempted rivals or superiors—such efforts by themselves or their friends would soon consign them to private life and personal contempt.

Dr. Zweifel kindly had one of his assistants take me to the new Frauen-klinik now nearly completed, though it will not be ready for occupation for a year. This building, which, independently of the ground, will cost more than three hundred thousand dollars,[1] is a model, so admirably devised and so well constructed. It will have a large lecture hall and operating theater, besides a small room with cement floor and walls of tiles for laparotomies; there is a room or hall for instructing midwives and provision for at least two hundred patients, I should think. Besides all this there is a large parlor, a waiting-room for patients and a consulting-room, and probably eight or ten additional rooms—cooking, dining, sleeping—all for the Professor of Obstetrics and Diseases of Women in the University of Leipzig, whose position carries with it the title and duties of the Director of the Frauen-klinik. He can have as many private patients to consult him at the hospital as choose to come. He will also have some private rooms for those who require operation, etc. When will anyone occupying a similar chair in any of the medical institutions of the United States have similar opportunities, rights, and immunities? But a far more important question—and it is unselfish, while the former might seem so—when will medical colleges, especially trustees of these institutions, recognize the importance of securing for medical students facilities for practical instruction in obstetrics and diseases of women corresponding with those that are found in the most important schools in Europe?

My chief object in coming to Leipzig was to see Dr. Sänger and some of his work; indeed, had it not been for his kind invitation I should not be here at all. Dr. Sänger, who has done more than anyone else to bring the Cæsarean operation into good repute, is a man thirty-eight years old, rather slight in form, very deliberate in action, and I should think more decidedly of a mathematical than of a poetical cast of mind; he formulates rules and obeys them. I have not seen him perform many operations, but the few that I have seen would be ample compensation for a much longer visit. His almost invariable use of silk, of course first made thoroughly aseptic, was quite a contrast with what I had witnessed in Berlin; his rare employment of wet sponges, but of dry antiseptic gauze for application to a bleeding surface, was also a notable difference. Finally, in a hysterectomy, the pedicle was treated extra-peritoneally, being ligated, not with wire but with rubber tubing; and for the ordinary transfixion needles he employed two ordinary sail needles, and the method seemed to me admirable in execution. I saw him perform his operation for ruptured perineum, but this has been described in at least one text-book well known to the American profession, so that I shall not attempt a description, and, at any rate, words without diagrams would be useless or confusing. The number of sutures, of fine silk, for uniting the sides of the vaginal flap astonished me, but the immediate result was perfect, part fitting to part with complete accuracy, and the new perineum promised complete success; Dr. Sänger stated that he had left the internal sutures five weeks without their causing any irritation. Another operation, not original with Sänger, however, nor did he so claim it (it probably was first derived from or suggested by one of Simon's operations), performed by him was stitching the cervix to the vaginal vault. The following is the method: a strong, curved needle, threaded with catgut, or silk, is held by the forceps; then the cervix is drawn so far down that a finger in the rectum can feel the retro-uterine cul-de-sac; next the needle is carried through the cervix on one side of the canal and into the peritoneal cavity, whence it is made to emerge in the vaginal vault; a similar ligature is passed on the other side; then each is tied. The operation is designed for retroflexion or retroversion, but its value is yet to be determined. Dr. Sänger did not speak hopefully of it.

The hysterectomy was a difficult operation, but admirably accomplished; it was performed on account of a myoma that had in part undergone cystic degeneration. The tumor not only occupied considerable space in the abdomen, but had also grown downward by the side of the vagina, which constituted the chief difficulty in the operation.

Dr. Sänger's operations are performed at his private hospital, a most admirably constructed and arranged building—indeed, considering too the ample and pleasant grounds attached to it, the best institution of the kind I have ever seen. I think it quite possible that the building alone cost sixty or seventy thousand dollars.

In addition to his hospital work and other private practice, Dr. Sänger has one or two hours a day at the "Polyklinik," where a number of patients attend, and where he gives instruction to his private students. Among the patients there one day I saw a girl of thirteen, pregnant by her father; the mother, who had left her husband, was pregnant by another man—a revelation of

[1] Leipzig has about one-third the population of Philadelphia, but when will the latter have such a building?

depravity which Dr. Sänger said was very rare, and he asked me not to think (as of couse I would not) such cases as characteristic of German morals.

Dr. Sänger is an earnest advocate of the *dry* treatment of wounds, *e. g.*, after the closure of an abdominal incision he applies iodoform very freely, not for any antiseptic properties, but simply to keep the parts dry; so, too, after a perineal operation, iodoform is applied and over it dry antiseptic gauze, and this dressing is subsequently repeated twice every twenty-four hours. He is a thorough believer in antiseptic surgery and has almost a wealth of means—sterilizing apparatuses, antiseptic solutions, etc., for carrying his faith into practice. He called my attention to the value of sand (sea sand is the best) for mechanical disinfection of the hands, using it with warm water and soft soap, the *sapo viridis* of the United States Pharmacopœia, I believe.

I ever gratefully acknowledge myself a debtor to Dr. Sänger for much useful knowledge.

Let me beg those who take the time to read these letters to pardon the frequent use of the first person singular; those who know the writer need no apology or explanation, but those who do not may be assured that it does not arise from any egotism, but simply from a desire to make the narrative free from all obscurity, and to secure for it some vivacity. It was said that only a good swimmer should attempt to read the writings of Heraclitus. It is my desire that whatever I write may be so plain that it can be readily understood by any reader.

T. P.

NEW YORK.

Public Baths—Dirty Streets—Leprosy Scares—Artificial Ice—Impure Water.

IN my last letter I referred to a proposition to establish public baths of the variety known as the "rain baths," or douche; already such a bath has been put in successful operation. The work was done under the auspices of the New York Association for Improving the Condition of the Poor, and the committee having the matter in charge has shown good judgment in selecting a site convenient to the multitudes that throng our down-town tenements. It is situated in Center Market Place, but a short distance from the indescribably filthy dens of Bayard Street, and "the Bend" in Mulberry Street. The building is divided into a number of bath rooms, so that the bather does not have to sacrifice privacy for cleanliness. In the women's portion of the edifice, provision is made for washing and drying clothes. Contrary to the opinion of the promoters of this scheme, the people of the neighborhood were not long in availing themselves of the privileges of the new bathing-place, as evidenced by the fact that 125 persons patronized it the first morning it was open. This is certainly very encouraging—so much so, that one is inclined to believe that after all the people of Gotham will see their foreign population looking clean and civilized long before they will have an opportunity of enjoying the comfort of clean streets. Our long-suffering people have grown so accustomed to having their Schneiderian membranes and conjunctivæ irritated and inflamed by dust, laden with all kinds of filth, to say nothing of multitudes of germs, that they have ceased to murmur; but now their burden is made heavier, and those who are compelled to remain in the city during the hot months are regaled with the stench arising from garbage barrels which are left unemptied on the sidewalks for several days at a time. If some impulsive citizen revolts at this state of affairs, and appeals to the police, he is told it is "out of their jurisdiction;" and if he complains to the street-cleaning department, he is met by an official, who shrugs his shoulders and sadly informs the indignant and anxious citizen that it is impossible to do more with the present appropriation, and that "Street Commissioner Beattie is a very much abused man." What effect the condition of our streets will have upon the public health remains to be seen, but at the present time it is a topic of deep interest to our sanitarians.

Nearly every summer, the dulness and apathy incident to this season induce some of the newspapers to start up a "cholera scare," or something of the kind. This time it is our old friend, the leprosy, which is honored with this prominence. Some of the press correspondents have nearly gone into hysterics over the alleged discovery of one or two cases of leprosy, and have proceeded at once to denounce what they are pleased to consider the insufficient steps taken by the Board of Health. They seem to forget all about what has been said in regard to it on similar occasions in the past, and are entirely oblivious of the fact that a leper has been in one of our large city hospitals for a number of years.

The contrast between this year and last, as regards that most necessary article, ice, is pleasant indeed—that is to say, to the consumers; but if I am not greatly mistaken, all but a favored few of the dealers are wroth with themselves, and with the world in general. It is certainly very silly and inconsiderate on the part of the consumers to desire cheaper ice, especially when they can at the same time obtain a purer article, but such is the fact, and so strong has the tide set in favor of artificial ice that it has become necessary for the losing parties to circulate broadcast all sorts of rumors concerning the unhealthfulness of the new product. And so it has come to pass that people, ordinarily well informed, may be heard saying that they are afraid to use the artificial ice, because "it contains ammonia," although they would not think for a moment of objecting to eating ice-cream on the ground that salt has been used in the freezing process. Again, many persons have received circulars containing an analysis made by Professor Leeds of a sample of ice alleged to have been made by *one* of these new companies, in which it is shown that the water from which the ice was made contained much noxious organic matter, and that the water from this ice contained quite a notable proportion of zinc. It is on account of the presence of this latter impurity that I refer to the circular. These companies all claim to make the ice from *distilled* water, and, as is well known, such water exerts a far greater solvent action on metal pipes through which it passes than does ordinary water; hence, if galvanized iron or lead pipes are used, zinc or lead is likely to be found in the water. The artificial ice factories have been so busy this season that it is not improbable that some of them have been hastily constructed, and the process of manufacture carelessly conducted, and that in consequence an otherwise highly commendable industry may be productive of much mischief.

Of kindred interest is the condition of our water

supply, and it must be said that the water is at present more than usually bad. Ever since the completion of the new aqueduct, about a year ago, it has frequently been so muddy as seriously to interfere with laundry work, and this has increased to such a degree that recently men have been employed to go from hydrant to hydrant and "blow off" the muddy water that had accumulated. Notwithstanding this muddiness, it is only within the past few weeks that the water has actually tasted badly. The condition of our water supply is at present the subject of an investigation by the chemists of the Board of Health, and so far as their work has been made public it shows that there are many sources of pollution of the Croton water. I do not wish to be understood as indorsing the sensational reports printed by an enterprising journal, which has set on foot an independent investigation of the Croton water-shed. In this connection, it is interesting to recall a paper read by Dr. C. G. Currier before the Section on Public Health of the Academy of Medicine, on the "Self-purification of Flowing Water." The author stated that, in general, water containing many and various bacteria is unsuitable for drinking purposes unless it has undergone the sterilizing influence of heat. Chemical tests to determine the purity of water are entirely inadequate; the modern science of bacteriology can alone be relied upon to settle this question, and it was on this account that the aid of bacteriology had been invoked in determining the amount of purification taking place in flowing water. Following out this line of investigation, it has been found by observations on the sewage flowing from Chicago, that the water showed evidence of purification after flowing eighty miles; and this was still more apparent at Peoria, one hundred and fifty miles distant. This purification is due to dilution, sedimentation, the antagonistic action of bacteria, and particularly to oxidation. Acids present in the water seem to exert no distinct disinfectant action, for in all kinds of bottled carbonated waters living bacteria may be found, unless these waters have been subjected to some sterilizing process. The Central Park reservoir, in this city, shows a certain amount of purification resulting from sedimentation, but much undesirable contamination of the water here might be avoided by moistening the dusty and much-frequented walks and roads in the immediate vicinity of this reservoir. Observations in the old Croton aqueduct showed that the average flow was two and a half miles per hour, and that providing no further contaminations occurred, the water became distinctly purer after flowing a few miles. Some have claimed that a water supply can be readily purified by pumping air freely into the water, but the value of such a measure would seem to be very questionable when it is remembered that numerous bacteria have been found in ice formed from the spray of waterfalls. Here the combined action of agitation, aëration, and freezing, have failed to destroy the bacteria. While Dr. Currier claims that the most practical and the safest way of sterilizing water, in order to render it potable, is to boil it for an hour, Dr. Chandler seems to have been staggered by the hardihood of bacteria which persisted in living in the icy spray, for he was quoted as saying that he did not think it made much difference whether or not one drinks polluted water, and he backs up this rather audacious statement by pointing to certain statistics which show that Albany, which receives the water polluted with the sewage of Troy, reports six cases of typhoid fever, while Troy, during the same period, had five cases of this disease. Such conflicting opinions, I fear, will tend to swell the numbers of those who object to drinking water in any form.

NEWS ITEMS.

The Mississippi Valley Medical Association will hold its seventeenth annual session at St. Louis, October 14th 15th and 16th. A program of interesting papers has been prepared, and provision has been made for a thorough discussion, in which representative men from various sections of the country have been invited to participate. Dr. I. N. Love is the chairman of the Committee of Arrangements.

Proceedings of the Tenth International Medical Congress.—It is announced that the publication of the *Proceedings* of the Tenth International Medical Congress, held at Berlin last year, has so far progressed that the reports of section five for internal medicine will be issued in a short time. This will conclude the second volume (including the sections of anatomy, physiology, general pathology, pathological anatomy, pharmacology, internal medicine and pediatrics). Volume V. (containing the papers of the sections of dentistry, hygiene, railway hygiene, climatology, medical jurisprudence and military sanitation) will be ready for distribution on the completion of sections fourteen and sixteen. The reports of sections to complete Volumes III. and IV. have gone to press.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 18 TO AUGUST 31, 1891.

WYETH, M. C., *Captain and Assistant Surgeon.*—Sick-leave of absence extended three months, on surgeon's certificate of disability.

KIMBALL, JAMES P., *Major and Surgeon.*—Is granted leave of absence for twenty-five days.

POTHEMUS, ADRIAN S., *Captain and Assistant Surgeon.*—Is hereby granted leave of absence for one month, to commence on or about September 3, 1891.

PILCHER, JAMES E., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Clark, Texas, on expiration of leave of absence, and is assigned to duty at Fort Ringgold, Texas.

HAVARD, VALERY, *Major and Surgeon.*—Granted three months' leave of absence, to take effect on or about September 5, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING AUGUST 29, 1891.

DU BOSE, W. R., *Passed Assistant Surgeon.*—Ordered to duty at Naval Academy, Annapolis.

HARMON, G. E. H., *Surgeon.*—Detached from Naval Academy, Annapolis, and wait orders.

WELLS, HOWARD, *Surgeon*—Ordered for temporary duty at Naval Station, New London.

A. A. HOEHLING, *Medical Inspector;* J. B. PARKER, *Surgeon;* and O. D. NORTON, *Passed Assistant Surgeon*, ordered to Naval Academy, Annapolis, September 3d, to examine physically candidates for admission to the Naval Academy.

HESLER, F. A., *Passed Assistant Surgeon.*—Detached from U. S. S. "Pensacola," and ordered to the U. S. S. "Charleston."

CORRECTION.—For the name of Dr. Longaker, in the twelfth line from the bottom of the first column of page 238 of THE NEWS of August 29th, read Dr. Langrehr.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ONE THOUSAND CASES OF LABOR, AND THEIR LESSONS.

BY G. W. H. KEMPER, M.D.,

MEMBER OF THE DELAWARE COUNTY (IND.) MEDICAL SOCIETY, EX-PRESIDENT OF THE INDIANA STATE MEDICAL SOCIETY, MUNCIE, IND.

A MEDICAL man, after twenty-five years of practice, ought to be able to contribute something useful to his professional brethren. I therefore offer the following contribution to our obstetric literature with a hope that it will interest and instruct the reader. The experience reaches over a period of a quarter of a century (1865–90)—a time embracing the buoyancy and ardor of early professional life and prolonged into maturer age when theories give way to the permanency of facts.

The records comprise my first one thousand cases of labor at or near full term of gestation, excluding cases of consultation. All the labors occurred in Delaware County, Indiana, in a healthy region of country and among a vigorous class of women, but few of whom were foreign-born. The facts were recorded in my case-book soon after the labors were completed, noting my failures as well as my successes, and every case as it occurred in my practice (except in consultation cases) has been faithfully given in this report. With religious care I have not added to, nor have I taken away "from the things which are written in this book."

My report will be all the more interesting from the fact that it represents a country practice instead of a city or a hospital practice—the usual sources of obstetrical statistics. Possibly it will more nearly represent the general experience of the average obstetrical practitioner.

As I now look over the records of my cases, I see where I might have improved in some difficult cases, and I also note that better surroundings might have given better results. The country practitioner is deprived of many of the advantages of a city practice. Competent assistance is ever ready and abundant in the city and hospital, but it is not so in the country. Often alone have I watched with painful anxiety difficult cases in the lying-in chamber—far removed from friendly counsel—and, only aided by faithful women, have met and performed some of the trying operations of obstetric practice.

My case-book contains a thousand chapters, each one written amidst the ever-varying duties of a physician's life, and if I may be pardoned for comparing a little thing to a great one, I may say of it, as the celebrated Dr. Johnson said of his dictionary, "that it was written, not in the soft obscurities of retirement or under the shelter of academic bowers, but amid inconvenience and distraction."

There were 737 different women involved in the 1000 cases, distributed as follows:

Attended	550	women	1 time	=	550
"	129	"	2 times	=	258
"	43	"	3 "	=	129
"	12	"	4 "	=	48
"	3	"	5 "	=	15
	737				1000

The following table shows the labors ordinally grouped, with the total number in each. I arrange them in two groups of a first and a second five hundred, to show a remarkable similarity:

No. of labor.	1st 500.		2d 500.		Total.
1st	174	+	160	=	334
2d	117	+	116	=	233
3d	74	+	87	=	161
4th	38	+	51	=	89
5th	34	+	29	=	63
6th	17	+	17	=	34
7th	13	+	14	=	27
8th	16	+	14	=	30
9th	5	+	5	=	10
10th	6	+	4	=	10
11th	0	+	1	=	1
12th	0	+	1	=	1
13th	1	+	0	=	1
Not stated	5	+	1	=	6
	500		500		1000

The number of labors for each month is:

Month.	Births.	Month.	Births.
January	84	July	102
February	78	August	107
March	82	September	83
April	66	October	95
May	74	November	75
June	85	December	69
	469		531

The smallest number of births occurred in April, and the largest in August. A majority (62) of the births occurred in the last six months of the year.

The following table indicates the number of births at each particular hour of the day. The time indicated is that nearest to the even hours. For instance, if a birth occurred at or previous to half-past one o'clock, it is marked 1; if one or more minutes later, it is marked 2.

Hour.	Births.	Hour.	Births.	Hour.	Births.
1 A. M.	44	9 A. M.	45	5 P. M.	38
2 "	47	10 "	48	6 "	30
3 "	56	11 "	51	7 "	39
4 "	35	12 M.	27	8 "	32
5 "	53	1 P. M.	37	9 "	42
6 "	56	2 "	51	10 "	43
7 "	46	3 "	28	11 "	27
8 "	50	4 "	38	12 "	48

Not stated, 2

From the above it will be seen that the smallest number of births occurred at 12 M. and 11 P.M., while the largest number was at 3 A.M. and 6 A.M. The popular opinion that more births occur at night has a slight show of support. Counting from 7 P.M. to 6 A.M. inclusive, we have 522 births; while from 7 A.M. to 6 P.M. inclusive, 489 were born—a difference of 33 in favor of the night hours. A greater disparity, however, is shown if we contrast the first half of the day with the second half; as from 1 A.M. to 12 M. inclusive, 558 births occurred, while from 1 P.M. to 12 P.M., only 453 births occurred—a difference of 105 in favor of the first half of the twenty-four hours. There is little doubt that more labors begin during the night than during the day.

In order that the reader may not suspect inaccuracies in my figures, I desire that he will bear in mind that I had 13 cases of twins, and while the labors will number 1000, the births will number 1013. This fact remembered will save confusion in the remaining statistics.

In order to show at a glance a general summary of my cases, I will introduce at this point statistics showing by way of comparison the 1000 cases in two groups of 500 each. The similarity of the two columns is striking as demonstrating how medical statistics repeat themselves and show a tendency to uniformity.

	1st 500.		2d 500.		Total.
Primiparæ	173	+	160	=	333
Multiparæ	327	+	340	=	667
Males	258	+	260	=	518
Females	251	+	244	=	495
Primiparæ { males	70	+	76	=	146
Primiparæ { females	104	+	84	=	188
Vertex presentations	486	+	483	=	969
Vertex and hand	1	+	1	=	2
Face	0	+	2	=	2
Breech	13	+	13	=	13
Footling	7	+	4	=	11
Shoulder	2	+	1	=	3
Twins	9	+	4	=	13
Convulsions	6	+	3	=	9
Post-partum hemorrhage	6	+	6	=	12
Adhesion of placenta	8	+	3	=	11
Prolapse of funis	3	+	2	=	5
Placenta previa	1	+	2	=	3
Inversion of uterus	1	+	0	=	1
Turning	2	+	1	=	3
Cephalic version	1	+	0	=	1
Forceps	6	+	31	=	37
Colored	7	+	8	=	15
Illegitimate	5	+	3	=	8
Death of mother	3	+	0	=	3
Stillbirths	17	+	19	=	36

PRIMIPARÆ.—Exactly one-third of my cases were primiparæ, the youngest of whom was aged fifteen years, and the oldest forty-two years. The duration of labor in the latter, from the first pain to the birth of the child, was 9 hours and 15 minutes.

In a recent article Dr. Courtade, of France, says: "The influence of age upon the sex of children is still problematical." On the contrary, Kleinwächter, who based his observations on 920 primiparæ, says: "The older the primipara is the more likely is she to bear a boy; those from twenty to twenty-one years of age, however, bear more girls than boys." In my cases I found that 44 primiparæ at the age of twenty-one, gave birth to 31 females. This is the only remarkable fact in my observation of the influence of age on sex. I found that 256 primiparæ, whose ages ranged from fifteen to twenty-four years, bore 118 males (47 per cent.), and 138 females (53 per cent.). I also found that 54 primiparæ, whose ages ranged from twenty-five to forty-two years, bore 20 males (47 per cent.), and 34 females (53 per cent.). In short, I found that at all ages the females generally outnumbered the males. I think there is one rule we may safely affirm, namely, that in the sum total, primiparæ bear more females than males. On this fact hang all the laws touching the problem of the relation of sex to first births. It explains why females predominate in illegitimate births—a large proportion of this class of unfortunate women being primiparous.

MULTIPARÆ.—By reference to the table the number of each particular order of multiple births can be seen. The fact of small families will be discovered when we notice that the births numbered 1st, 2d, and 3d, amount to 728, while all the others, from 4th to 13th, only amount to 266.

SEX.—The number of children born in the 1000 labors was 1013; of these, 518 were males and 495 were females—an excess of 23 of the latter. This is not far from the usual ratio of births, namely, 106 males to every 100 females. My 667 multiparous cases show 372 males and 307 females, an excess of 65 males. The reverse is true of the primiparæ, namely, the 333 show 146 males and 188 females, an excess of 42 females.

VERTEX PRESENTATIONS.—Of the 1013 children born, 971 presented by the vertex, a ratio of 95.85 per cent., and only 3.15 per cent. for all other presentations. Dubois gives 94.7 per cent. for the vertex. Late statistics of Churchill, in 98,409 labors, give 92.8 per cent. for vertex, and 7.2 per cent. for all others. Thirty-six of the children were stillborn. In 2 cases the hand came down by the side of the head, and in 2 the cord was prolapsed.

FACE PRESENTATIONS.—I met with 2 cases of this presentation. Both presented with the chin to the

symphysis. One labor was unaided; in the other, after some delay, I used forceps.

BREECH PRESENTATIONS.—Of this variety I had 26 examples—80 occurring in primiparæ and 18 in multiparæ. 11 males and 15 females were born. 23 of the children were saved and 3 were lost. One of the latter occurred at a tenth and another at a twelfth labor, both being quite tedious; the third occurred with a primipara, death being due to the delayed after-coming head. Dubois reckoned a mortality of 1 in each 11 children presenting by the breech. Two of the cases were twins, and another was one of twins, its companion presenting by the vertex.

FOOTLING PRESENTATIONS.—I met with 11 footling cases, 3 occurring in primiparæ and 8 in multiparæ. 6 males and 5 females were born. 8 children were saved, and 3 were lost. In 6 instances the child was one of twins. One of the fatal cases occurred in a primipara; both feet presented complicated with a prolapse of the cord. In the second fatal case the cord was around one of the thighs. The third was a feeble child, one of twins; its companion having perished about the fourth month, remained and infected the mother. This case will be mentioned further on. In 1 case a knee presented with the opposite foot—a presentation that Madame Lachapelle met with but once in 3445 deliveries.

SHOULDER PRESENTATIONS.—I met with 3 cases of this cross-presentation. In the first case the right shoulder presented with the funis protruding through the vulva. The child was a female. In the second case the left shoulder presented, the hand and forearm protruding through the vulva. The child was a female. In the third case the right shoulder protruded, but the arm did not come down. The child was a male.

February 19, 1873, I was called in consultation by Rev. Dr. B. F. Day, to see Mrs. A., in her fourth or fifth labor. Upon examination I found the right shoulder presenting, head in left iliac region, and the back of the child directed forward. While I was making the examination the arm descended, and the hand protruded through the vulva. Following in rapid succession, the thorax was detected, then the hip, and finally the breech, while the arm remained in the vagina. Labor was soon terminated, and I had the rare opportunity of witnessing a spontaneous evolution—a process, it is said, that Professor Bedford so much desired to witness, and died without the privilege. The child was medium-sized, and stillborn.

TWINS.—Thirteen pairs of twins were born. 1 labor was primiparous, and 12 were multiparous. 11 males and 15 females were born. 23 children were saved, and 3 were lost. In 3 labors both children were males, in 5 both were females, and in 5 one of each sex. In 11 cases two sacs were present, in 1 a single one, and I failed to record it in 1. 14 were vertex, 4 breech, 6 footling, 1 a shoulder and funis, and 1 vertex and hand presentations.

In 4 cases both presented by the vertex, in 1 both by the breech, in 1 a vertex and breech, in 6 one a vertex and the other a footling, and in 1 a shoulder and funis, and the other vertex and a hand. In 8 cases one placenta was present and in 5 two were present. In 11 cases both lived, and in 1 both were dead (cuticle detached), and in another, one died. The interval between the births of the two children was five minutes in 3 cases, ten in 1, fifteen in 4, twenty in 1, thirty in 3, and fifty in 1.

CONVULSIONS.—I encountered 9 cases of convulsions. Of these 7 were I-para, 1 II-para, and 1 V-para. 8 of the women recovered and 1 died. All the children presented by the vertex. 7 were saved and 2 lost. 2 of the children were males and 7 were females. 1 male and 1 female were lost. The woman who died gave birth to a female that lived. 1 woman had one convulsion, 2 had three, 1 had four, 1 had five, 1 had seven, 1 had nine, 1 had eleven, and 1 (fatal case) had numerous. In 7 cases the convulsions began prior, and in 2 subsequent to delivery. Of the 7 cases commencing before delivery, 1 ceased the day before, 2 ceased at, and 4 continued after, delivery. One of the post-partum cases began before the expulsion of the placenta—the patient that had five convulsions; in the other case they did not begin until sixty-five hours after delivery and were numerous. In one case the right shoulder was dislocated by the violence of the convulsions, the reduction being effected the following day while anesthetized. Forceps were used four times to expedite the labor. Venesection was resorted to twice. Bromide of potassium and chloral were used in a number of cases. Chloroform was used in a few cases. Morphine was used hypodermatically in the last 5 cases. I used it in from one-fourth to one-half grain doses, repeated as seemed necessary. I consider this remedy the sheet-anchor in this disease. I have used this treatment with excellent results in many other cases that I have seen in consultation. I also think I have prevented an attack of convulsions in women who, while in labor, were seized with a severe headache and other premonitory symptoms of the disease. It is a most excellent plan to unload the bowels in all these cases, and this is easily and readily done by giving a large dose of calomel mixed in a teaspoonful of melted butter and poured down the patient's throat. This mode of administration I learned from the lamented George T. Elliot. If the reader will try it in the next case he meets, he will thank its author for suggesting it.

POST-PARTUM HEMORRHAGE.—I met with 12 cases

of this accident. 2 occurred in primiparæ and 10 in multiparæ. 5 males and 8 females were born, all alive. One followed the birth of twins. One occurred in connection with adhesion of placenta. One case occurred after the use of forceps. One of the primiparæ was a "bleeder." Immediately after the expulsion of the placenta the uterus rapidly filled with blood. With ergot and manual compression the clots were expelled, only to refill in a few seconds. This process was repeated a number of times. The hemorrhage was controlled after the loss of a large quantity of blood. The lady, a German, informed me that a sister in her native land had flooded to death after a confinement. My patient removed to a Western State and I never learned her subsequent history. For many years I gave a dose of ergot as soon as the placenta was cast off into the vagina, but meeting with no case of hemorrhage for a long time, I abandoned the habit, only to meet with three cases of flooding in close proximity, so that, especially with multiparæ, I again resumed the after-dose of ergot. I am very favorable to manual compression of the uterus for the expulsion of the placenta, and I also maintain the fixed contraction with the hand over the hypogastrium for a few minutes; thus hemorrhage is guarded against and after-pains largely prevented. With this precaution I rarely meet with a case of severe after-pains.

ADHESION OF PLACENTA.—Eleven cases of adhesion occurred, 2 with primiparæ and 9 with multiparæ. 6 males and 5 females were born—2 stillborn—both females. Two of my cases happened with one of the women whom I attended in five successive labors; in the other three labors the placenta came away normally. One of the women had had adhesions in two of her former labors, in one of which I removed the placenta for the attending physician. The firmness of the adhesions in this subject was remarkable. It was one of those cases, as Barnes remarks, "where the structures of the uterus and of the placenta are so intimately connected—seeming, in fact, to be continuous parts of one organization—that you cannot tell where placenta ends and uterus begins." Another of my patients had suffered an adherent placenta in a former labor. If we meet with adhesion of the placenta in one labor we may very properly fear a repetition in subsequent ones. All my patients had a short and favorable convalescence.

PROLAPSE OF FUNIS.—The cord presented in 5 of my cases, 1 in a primipara and 4 in multiparæ. Sex was represented by 1 male and 4 females. Only 1 of the children, a female, was saved. In 2 of the cases the presentation of the child was by the vertex, in 1 a shoulder, in 1 a double footling, and in the remaining 1 the vertex with the arm and hand extended in advance of it. In 1 case pulsation had ceased in the cord when I was called and no effort was made to replace it. In 1, with shoulder presentation, I turned and saved the child. In the remaining 3 cases I made an attempt to keep the cord above the brim by postural treatment, but the effort was not successful.

PLACENTA PREVIA.—Three cases of this terrible complication were met with—1 in a II-para, 1 in a IV-para, and 1 in a V-para. In each case the child presented by the vertex. One of the children was a male and 2 were females. In each case the attachment was lateral. In all I detached the placenta as far as I could reach with the finger, and ruptured the membranes. In one case I used a tampon. When the head engaged the os all hemorrhage ceased. All the children were stillborn and all the mothers did well.

INVERSION OF UTERUS.—A short abstract of my only case will be given in this report; I have elsewhere reported the case in greater detail (*Indiana Journal of Medicine*, March, 1874):

Mrs. B., aged thirty-three; sixth labor. Without pain, at 3 P.M., the waters escaped, and pains supervened at once. The child, a male, was born at 9.30 P.M. About five minutes later, while making compression over the uterus and slight traction on the cord, the woman lying upon her back, a strong pain came on and the uterine globe escaped from my grasp. An examination revealed the inverted uterus, with placenta still partially attached, lying in the bed between the woman's thighs. I hastily separated the placenta, and indenting the fundus with the tips of my fingers, soon restored the uterus to its place. The hemorrhage was excessive while the inversion continued. So quick was the manipulation that the woman was not aware of the real nature of the trouble until restoration was complete. I did not wait for an anesthetic and the pain was slight. I am confident that the accident was not due to compression or traction, as both were used within proper bounds, such as, both before and since, I have resorted to hundreds of times for the removal of the placenta.

PODALIC VERSION.—I resorted to this operation three times. The first time was to correct a right shoulder presentation complicated with a prolapsed funis. The subject was one of twins. I performed version and saved the child, a female. Immediately a second bag of waters formed, pushing the placenta (a single one), followed by the vertex and arm of the second child. I was unable to extricate it, so I pushed the head back, seized both feet and delivered. I failed to resuscitate the child, a female. Both operations were performed without the aid of an anesthetic; the patient, a stout Irishwoman, persistently refused chloroform. Both operations occupied less than ten minutes. In the third case the left hand and the forearm protruded through

the vulva. Dr. Robert Winton administered chloroform and I performed version at once. The child, a female, was saved. Both women made a quick recovery.

CEPHALIC VERSION.—I had but one case, Mrs. M., in her second labor. She had had slight pains all day when I saw her at midnight. At that time the pains were stronger, but the os would barely admit the tip of my finger. I could not then distinguish the presentation. At 5 o'clock A.M. the os was fully dilated, and I diagnosticated a right shoulder presentation. Being alone in the country I administered chloroform myself and prepared to render assistance. After rupturing the membranes, with my right hand in the vagina, the patient lying upon her back, I pushed up the shoulder; at the same time, with my left hand on the abdomen, I pushed the breech upward and toward the median line of the mother. The manœuvre was easily accomplished, and a pain coming to my assistance, drove the head into the pelvis in the first position. Labor was terminated at 6.30 o'clock A.M., resulting in the birth of a medium-sized male. The mother and child did well.

FORCEPS.—With each succeeding year I resorted more frequently to the use of this instrument. I used forceps 37 times, as follows:

1st	300 cases	1 time,	or 1 in 300 cases.	
2d	300 "	9 times,	or 1 in 33⅓	"
3d	300 "	17 "	or 1 in 17½	"
Last	100 "	10 "	or 1 in 10	"

An average of once in 27 cases. 28 of the women were I-paræ, 3 II-paræ, 3 III-paræ, 2 IV-paræ, and 1 VII-paræ. All the mothers recovered; 31 of the children were alive, and 6 were stillborn. 14 of the children were males and 23 females. I used forceps 4 times for the relief of convulsions, once for a face presentation, once for the after-coming head, and 31 times for uterine inertia and tedious labor.

In a study of my cases I cannot discover any special relation existing between the repeated use of the forceps and stillbirths. In my first three hundred cases I had 10 stillbirths, in the second 11, in the third 8, and in the last one hundred 7. The causes of mortality in the last one hundred, however, will show that the excess was not due to forceps. For instance, 4 of the 7 stillborn children were anencephalic, 1 was due to a very tedious labor, 1 to extremely large shoulders that delayed the labor, and in the seventh case the mother had puerperal convulsions.

I am convinced of the fact that in my own experience infant mortality has been lessened, and maternal suffering has been diminished in numerous instances, by a timely resort to forceps.

COLORED.—Fifteen of the labors occurred with colored women, representing ten persons. One woman I attended five times and one twice. 8 male and 7 female children were born. All the mothers did well and all the children lived.

ILLEGITIMATE.—I met with 8 illegitimate births, all primiparous. Seven of the women were unmarried, and one was married, but living in adultery apart from her husband. 2 of the women were aged fifteen, 1 sixteen, 1 eighteen, 2 nineteen, and 1 twenty-one years. 3 males and 5 females were born, all alive. 7 of the women were white and 1 colored. Two of the women were associates and their labors occurred close together.

DEATH OF MOTHER.—Three of the women died. The deaths occurred respectively, by No., as 69, 360, and 381, so that after my third case I had 619 labors with no death. A short synopsis of the cases is here given:

CASE I.—Mrs. W., primipara, age twenty-one, was delivered after an easy, natural labor, December 19, 1870, at 1 A.M., of a female child. She did well until 6 P.M. of the 21st, sixty-five hours after her delivery, when she went into a severe convulsion. She had a number of light convulsions at irregular intervals afterward and never regained perfect consciousness. She died on the 25th, the seventh day from her delivery.

CASE II.—Mrs. F., third labor, age twenty. This woman was enfeebled by two former abortions at close intervals. At the time of the labor she was suffering from nursing sore-mouth. The labor was easy, and she gave birth to a male child. She gradually became anemic; diarrhea and anorexia supervened, her strength steadily failed, and she died on the tenth day after her confinement.

CASE III.—Mrs. N., primipara, age nineteen, was near her term of gestation. About the middle of the day, March 24, 1877, she was taken with a severe chill, followed by fever. She never felt motion after the chill. Pains began at midnight of the same day. I saw her at 8 o'clock the following morning and the child was born one hour later. It was a medium-sized female, and stillborn. The labor proved to be the initial of an attack of pneumonia that terminated her life eight days after her confinement.

STILLBIRTHS.—Eleven stillbirths occurred in primiparæ and 25 in multiparæ—a total of 36 cases. Sex was represented by 19 males and 17 females. The presentations were as follows: cephalic 30, breech 3, and footling 3. Two of the cephalic and 1 of the footling cases were complicated with a prolapsed funis, and in 1 of the footling cases the cord encircled a thigh. In 1 case the vertex, cord, and hand were in the vagina, and the birth occurred with the arm extended in advance of the head. One presented with head and arm pushing the placenta before them and necessitating turning. Four were anencephalic monsters, and in another case the bones of the head were absent, the scalp hanging in

loose folds. In 4 of the children the cuticle was detached, indicating that they had been dead for a number of days—2 of them being twins. In 1 case, to be again mentioned more particularly, the mother's strength had been reduced by a companion retained fetus. 3 deaths were due to placenta previa, and another to a concealed hemorrhage occurring frequently for several days prior to delivery. In 2 of the cases the mother had convulsions. 1 of the children had an enormous abdominal tumor, probably connected with the liver or kidney. In 2 cases the children were large and the shoulders were unavoidably delayed. In 1 the after-coming head was delayed, requiring forceps. In 1 case the mother had a chill the day before delivery, that proved to be the percursor of a severe pneumonia. In 2 cases the pelves were small. In 2 cases the labors were very tedious. In 2 cases ergot was a possible cause. One might have been averted by use of forceps, but the privilege was persistently refused. In 1 case other stillbirths had occurred.

Deformities.—I met with 4 anencephalic children. The bony structures, except those portions near the base of the cranium, and the soft parts of the cranium, were absent. The brain tissue was merely a small mass occupying the site of the cerebellum and uncovered by membranes. It is remarkable that all the cases were in my last 100—Nos. 904, 932, 937, and 976 respectively. One occurred in a primipara and 3 in multiparæ. One was a male and 3 were females. No communication existed between any of the women, nor did they attempt any explanation for a cause.

In another case the upper cranial bones were deficient, the forehead projecting unusually high, and posteriorly the scalp hung in a loop not unlike the mode of hairdressing known among ladies as a "waterfall." The ears were small and situated on prominences near the angle of each jaw. In 1 case a spina bifida existed in the lumbar vertebræ, both feet were deformed, the frontal bones were wanting, and the right ear was absent, only a trace of it existing at the usual site. The child, a male, lived nine days. I met with 2 cases of single talipes.

Premature Rupture of Membranes.—I have elsewhere entered more fully into this subject: "Is Labor Protracted by Early Spontaneous Rupture of the Membranes?"—*American Practitioner*, June, 1874; and "A Study of the Subject of the Spontaneous Rupture of the Membranes at Full Term of Gestation Preceding the Beginning of Labor," *American Journal of the Medical Sciences*, April, 1885.

In my 1000 cases I met with 75 cases of spontaneous rupture of the membranes at full term of gestation preceding the beginning of labor. This gives a ratio of 1 in every 13½ cases. I have excluded from my list cases of hydrorrhea gravidarum, simply considering true cases of rupture of membranes. No case was counted if a pain preceded the rupture.

After rupture of the membranes pains supervened "at once" in 28 cases; within 4 hours, but not coming for half an hour, 21; from 4 to 24 hours, 15; and after 24 hours, 11.

The 75 women were in labor 603 hours and 5 minutes, making an average of 8 hours and 2 minutes. Twenty-six of the women were primiparæ, and were in labor 265½ hours, making the average duration of of labor 10 hours and 12 minutes. Forty-nine were multiparæ, and these were in labor 337½ hours, averaging 6 hours and 53 minutes. I wish the fact to be noticed that the duration of labor in these cases is exact—more so than in ordinary cases, where, to assume a regularity, we are accustomed to count from the time the pains begin. In these cases the time was noted from the first pain to the expulsion of the child.

There were 41 males and 35 females born. Among the number was a pair of twins. The presentations were: cephalic 71, breech 3, and footling 2. The mortality to the children was 3, or 1 death in 25 births. Of these, 2 were males and 1 a female. All the mothers did well.

Retention in Utero of Dead Fetus.[1]—Mrs. S., aged twenty-three, primipara. When about four months advanced in pregnancy her health began to decline. An irritative cough supervened, with hectic chills, followed by night-sweats, loss of sleep, and general impairment of the vital forces. About one month prior to the time of her confinement she came under the professional care of the late Dr. R. Winton, then my partner. He found her presenting the prominent symptoms of a serious lung disease. Her cough had increased in severity, and was accompanied with a profuse expectoration of thick, yellow-colored mucus. Hectic chills recurred daily, with fever, followed by night-sweats, shortness of breath, etc. Anorexia was persistent. A marked diarrhea was present, the alvine discharges amounting to six or eight daily, unless controlled by opiates. Emaciation was extreme, and her pulse reached 120 to 140 per minute. So feeble had she become that she was unable to quit her bed.

Such was her condition when I was called to attend her in labor. I saw her at midnight, September 14, 1874. The pains were recurring regularly, and with considerable force for her strength. At 2 A.M. a small male child was born. I think it died during the process of birth. Examining for the placenta I felt a flattened object, which I withdrew. It proved to be a dead male fetus, which upon close inspection presented the appearance of one advanced to the fourth month. It had been preserved entire in the liquor amnii, and

[1] See Transactions of the Indiana State Medical Society for 1875, for a fuller consideration of this subject by the author.

flattened by compression between the uterine wall and its companion (*fœtus papyraceus*). The placenta was adherent, and necessitated manual interference. The two cords were attached to a single placenta. The fetus had died about the time the health of the mother began to decline. In a very short time after her confinement she began to improve; the cough abated, the diarrhea ceased, the fever and night-sweats were extinguished, and she was soon restored to perfect health. On March 17, 1876, I again attended this woman in labor. She was in excellent health, and gave birth to a healthy female child.

A second case occurred in a Mrs. M., aged forty-five, multipara. I had not seen this patient until I was called to attend her in labor. I gleaned the following history: For the last five or six weeks she had been troubled with an irritative cough, accompanied with a scanty expectoration. These symptoms had gradually grown worse, and dyspnea was well marked. Anorexia had increased, and emaciation existed to quite a degree; she was also anemic. A slight fever had been present, with an acceleration of the pulse. Pains began at midnight, April 3, 1877, and I saw her shortly afterward. She had last been unwell June 6, 1876, and counting 280 days from that period, she should have expected her confinement March 3d, so that she went twenty-two days over that date. Labor was terminated at 7 A.M. (4th). The child, a male, was stillborn, and putrid. The cuticle was detached in many localities, and the scalp was distended, with fluid beneath it. An odor of putrefaction was present, and the fetus had probably been dead for some time. Convalescence was slow, but she made a good recovery.

PENDULOUS ABDOMEN.—I met with two of these cases, one of slight degree, the other more marked. The latter patient, Mrs. W., aged thirty-six, was taken in labor with her sixth child, December 7, 1878. I saw her on the morning of the 8th, at 6 o'clock. The pains were inefficient, and the os situated high up in the pelvis. When she stood erect, or lay upon her back, the contour of the abdomen was unique. The uterus lay in front of, and projected below, the pubic bones, so that it was difficult to perform the vaginal touch.

At 8 o'clock A.M., the os being well dilated, I ruptured the membranes and liberated a vast quantity of liquor amnii. I was now able to distinguish the right foot and left knee presenting. The belly of the child lay across the pubes, while the head rested over the upper part of the mother's thighs. Of course, in this position the uterus could exert but little force, and the abdominal muscles still less, in expelling the fetus. I kept the patient upon her back, and tightened a bandage about her abdomen. With one hand I drew upon the right foot, while with the other I pushed the head upward. Labor progressed rapidly after this operation, and at half-past 10 o'clock, A.M., a large-sized female child was born, and in a few moments cried lustily. This woman informed me that of her five former labors three were breech or footling cases, and two were "crosswise"—probably shoulder presentations.

PARTURITION AND ERYSIPELAS.—I attended a woman in labor, September 18, 1868, who the day previous had stepped on some broken glass, which lacerated her right foot. On the day following her confinement erysipelas developed in the foot, and extended over the leg and thigh to the body, the disease continuing until the 27th. The skin and cellular tissue sloughed to such an extent that intractable ulcers formed, necessitating the amputation of the thigh months afterward. No puerperal disease supervened. She nursed her child, and both did well.

ANTISEPTICS.—I have never resorted to antiseptics, in the strict meaning of that term, in cases of normal labor. I have used the proper precautions of cleanliness in regard to my person and also my instruments. When in attendance upon severe cases of contagious disease I have refrained from taking charge of obstetrical cases. When the lochia has been offensive I have used vaginal irrigations, but I have regarded the use of vaginal injections after ordinary cases of labor as useless, and possibly harmful. Two years ago I contributed a paper upon the subject of "Antiseptics in Normal Labor,"[1] in which I claimed that antiseptic precautions were not as essential nor feasible in labor cases in the country as in city and hospital practice. In that paper I arrived at the following conclusions, and I am still of the same opinion:

1. The history of obstetrical practice teaches us that the lying-in hospital has always been a place of danger and mortality; therefore, it is obligatory upon those that have charge of these institutions to utilize every antiseptic measure known to the profession in order to save life.

2. The experience of country practitioners teaches us that women that are confined in healthy, isolated rural homes are not subjected to the contaminating influences of an ochlesis, and consequently do not require all the precautions of those exposed to hospitals, or even to the atmosphere of city life.

2. That country practitioners of medicine will generally show a lower rate of mortality in obstetrical cases than city practitioners, simply for the reason that they practice in healthier localities, are less exposed to contagious influences, and, possibly, have a healthier class of patients.

NOTES.

I met with one cord twelve, and another fifteen inches in length.

[1] Transactions of the Indiana State Medical Society, 1889, also, Medical and Surgical Reporter (Philadelphia), June 22, 1889.

I attended a woman twice in labor the same year, January 8th and December 27th.

There was no vesico-vaginal nor recto-vaginal fistula following any of my cases.

I met with two cases of general edema during labor. No untoward results followed.

I met with no severe case of puerperal fever, nor of pelvic complication.

I had one case of morbus ceruleus in an infant, a male. It lived seven hours.

The dorsal posture was the common one for delivery, and always so when forceps were used.

One labor was bloodless. The placenta came away in ten minutes, and my hand was not discolored with blood.

Two of the children on whom I attended at birth I afterward attended in labor. Thus they appear in my tables first as children, afterward as mothers.

I met with one mild case of puerperal mania in a multipara. The first symptoms developed five days after labor, and continued for three or four days.

A right labial thrombus developed in a multipara eleven days before her labor, and continued for five days, when it ruptured spontaneously. The labor was simply more painful.

One woman whom I attended in her sixth, seventh and eighth labors, had a secretion of milk for three days; it then disappeared, and the breasts became flaccid. The same peculiarity had existed in all her former labors.

In 1 case the parents had been married twelve years before pregnancy occurred. In 1 instance sixteen years had intervened since the last labor, and in 3 others thirteen, eleven, and ten respectively.

I attended a woman in labor on the 29th of December, who last came unwell February 27th, and the flow continued five days, ceasing March 3d. From that date to December 29th is 301 days. The date of menstruation was definitely fixed by the death of a relative. The child, a male, weighed 13 lbs. and 9½ oz., on correct scales.

I met one case of spurious pregnancy. The woman was forty-seven years of age, and had borne several children. I was engaged to attend her about the 25th of August. I was summoned on the 12th of October, and informed her she was not pregnant. She had been misled by sensations in the abdomen, which she mistook for fetal movements. She had based her opinion on this sole symptom.

If I place the low estimate of an average of 6 hours with each labor, I spent 6000 hours, or 8 months and 10 days in the lying-in chamber. Such an experience could not but impress me with admiration for the patience and self-sacrifice of woman, doomed as she is to drink deep of the bitter cup of suffering. In the time named I must have witnessed hundreds of times the rapid change from the anguish of distress to the climax of a woman's joy—the first realization of motherhood. I can make no stronger plea for this class of patients than has been made by our own physician-poet, Oliver Wendell Holmes: "The woman about to become a mother, or with her newborn infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her burden, or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation, where the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly."

ON THE UTILITY OF SUSPENSION IN DISEASE OF THE SPINAL CORD; ILLUSTRATED BY A CASE.

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THERE is in medicine a certain class of ill-balanced enthusiasts akin to those that have been aptly styled by Bartholow, "quid nuncs," on whose minds a suggestion of a novel therapeutic method is prone to make an impression like the desert's mirage on the vision of a deluded wanderer astray—conceptions of possibilities impossible. The illogical expectations of this class have not only created illusive hopes in many a sufferer, but have often served to bring discredit and oblivion to measures that, divested of all fanciful expectations, have in them much of good. That this is true of more than one method of treatment, once the fad of the world medical. now only spoken of to be condemned, there is no doubt.

More than two years have elapsed since the suspension-treatment of diseases of the spinal cord was introduced to the profession by Professor Charcot—a sufficient time in which to form a just estimate of its value. As a matter of course, so novel and promising a therapeutic measure for a class of affections so little susceptible of amelioration by any treatment, fathered by so eminent a neurologist as Charcot, not only attracted general attention, but was received almost with enthusiasm everywhere. The lay press vied with the medical press in accounts of the method, and soon the journals teemed with reports of its trial, generally favorable at first, but subse-

quently less and less so, until now it may be supposed that there are few who, if questioned as to its efficiency, would reply other than that it has had a fair trial and "its day."

I publish this note for the purpose of entering protest against this notion, and to urge that a method that can be productive of so much good, even if only in a small percentage of cases, should not be abandoned unless another more efficient can be found to replace it. Suspension has fallen into discredit with many largely because too much was expected of it. I still maintain the opinion I expressed two years ago, when perhaps the first to report a series of cases in which this treatment was tried: "That suspension will, even though aided by wisely directed medical and hygienic means, effect a cure in degenerative diseases of the cord is, I think, doubtful; but, as an adjunct to other modes of treatment, its utility is beyond question." I made no extravagant claims for this measure then,[1] nor do I now. The assumption that non-inflammatory affections due to an actual degeneration of nerve-elements could be vitally influenced by mechanical means, was not to be entertained; but that the progress of the most common of those that, uninfluenced by treatment, are apt to show a progressive tendency, could not infrequently be arrested and a decided improvement accomplished—though arrest and improvement might be but temporary—more promptly by suspension than by any other therapeutic procedure, has been unquestionably shown. That it should be most efficient, and more than palliatively so, in chronic inflammatory and sub-inflammatory affections of the cord, in those in which the diseased process has had its origin in the intertubular tissue rather than in the nerve-elements, its probable *modus medendi*[2] indicates. Cases of ordinary chronic myelitis, of cord-sclerosis, the mode of onset, symptoms, and course of which place them in an intermediate position between inflammatory and degenerative affections, are those most likely to be permanently benefited by suspension. A case of postero-lateral sclerosis, the clinical history of which indicates that it belongs to the latter class, has been under observation for several months, with improvement so gratifying that I shall report it here as an example of what suspension not infrequently accomplishes:

E. R., aged thirty-eight, had been a railroad engineer from early manhood, until crippled by the spinal malady for the treatment of which he came. He had been injured on the road a number of times about the head, body and limbs, but not for several years immediately preceding the onset of the existing trouble. No apparent ill results followed the accidents, and he was in seemingly good health in the early part of 1890, when he first noticed that sensation in the soles of the feet was impaired. This impairment was gradual and progressive until it reached the upper part of the thighs. At about the same time, or a little earlier, his gait became unsteady, especially in the dark. He felt tired in the back and loins on exertion, and the legs were more or less stiff and unwieldy. There were occasional lightning pains in the thighs, but never of great severity. He had been under treatment in the medical clinic of the hospital of the Jefferson Medical College for several months without improvement and was transferred to the neurological department by Dr. Louis Brinton in November. It was then noted that his gait was highly ataxic, and of the sort best described as reeling—an ataxia not unlike that present in cerebellar disease. He was unable to stand or to walk with closed eyes. The lower limbs were quite rigid. The knee-jerk was much exaggerated, but no rectus or ankle-clonus could be excited. The plantar, cremasteric and lumbar reflexes were absent; the abdominal reflex was present; gluteal and scapular reflexes were present on the right side. There was decided plantar anesthesia, and partial tactile loss in the legs extended somewhat above the knees. There was partial anesthesia of the hands and fingers, with some loss of the muscular sense. Pain-sense was everywhere preserved. The plantar temperature-sense was delayed and dulled, more decidedly to heat than to cold. The muscles were large, well-nourished, and without tenderness on pressure. There was always normal faradic and galvanic response. The electrical examination was repeated on several occasions. A dull, aching pain in the lumbar region, with a sense of constriction about the waist and abdomen, had been constant from the first. A hot sponge drawn along the spine gave rise to a burning sensation in this situation. There was some tenderness on pressure over the spinous processes of the lumbar vertebræ. There had been loss of sexual desire and ability to perform the sexual act for about a year. Hearing had been impaired for a number of years. It had improved about a year immediately preceding the onset of the spinal affection, but subsequently again became worse, being deranged in a manner somewhat different from the primary impairment. The patient observed that whispers could be distinguished better than loud sounds, and low tones better than those of high pitch.[1] The eye report by Dr. Hansell was: R. $\frac{20}{XL}$; L. $\frac{20}{XXX}$; pupils react to light

[1] I shall not now revert to the cases first reported. A further account of these, together with a report of others under observation subsequent to the date of my first paper, will be published at a future day.

[2] Separation and breaking down of inflammatory adhesions; relaxing compressed though still healthy nerve-tissue.

[1] Dr. C. H. Burnett recently very kindly made an aural examination. He reported: Left membrana tympani greatly thickened and retracted, lusterless and blue; right membrane similar, though lusterless in less marked degree. Chronic non-suppurative catarrh of both ears; whispers near the ear are better distinguished than the loud voice, and low tones generally are distinguished more readily than high. High-pitched, loud sounds seem to cause an ataxia of appreciation of sound.

and accommodation; visual field normal; venous hyperemia of the right disc; commencing atrophy of the left nerve.

There was no history of syphilis. Treatment by suspension was begun on November 19, 1890, all internal medication being discontinued. The condition of the patient at that time was as narrated. From this date he was suspended three times weekly until about the middle of April, 1891. The suspensions were made as often by the head alone as with the arm and head-supports. When the axillary straps were also used he was always swung clear of the floor, and, after the fifth time, the duration was about five minutes. Improvement began after the fourth suspension, and was continuous. It was most decided as regards the ataxia, the most prominent symptom. After the twelfth suspension he abandoned his stick altogether in walking. About the middle of April, less than five months after the treatment was begun, the ataxia had lessened so decidedly that the patient was able to take a position as switch-tender on the road. Since this date he has presented himself but once weekly for suspension. His gait is now no longer unsteady, unless he walks with his eyes closed or turns suddenly—then there is slight staggering. He is still unable to stand with his feet in juxtaposition and his eyes closed. The back pain and vertebral tenderness were early relieved by suspension and soon disappeared.[1] A hot sponge, drawn along the spine, causes merely a sense of greater warmth in the lower lumbar region (where before burning was felt) than above. Tactile sensation in feet and legs is much improved. The temperature-sense is still imperfect and delayed. The plantar, abdominal, epigastric, gluteal and lumbar reflexes can now be elicited on both sides. The right knee-jerk is slightly excessive, the left is normal. The legs are much more supple than they formerly were. There is slight ataxia in the right hand, but the patient is much less clumsy with the fingers. Sexual desire has returned; the power, only slightly. Hearing seems more acute than it was at first. When spoken to in a high-pitched voice the patient understands better than he did. The eye condition has not improved.

The result of suspension in this case was so decided and so gratifying that I deemed it worthy of special report in connection with the few remarks preceding its narration. It exemplifies what suspension can do. Even if such results are obtained in but a minority of cases, is that sufficient reason for its entire abandonment?

2620 N. FIFTH STREET.

[1] The discomfort about the lumbar spine was nearly always lessened for a number of hours following suspension. I have noticed this in several cases. It is probably due to relief of the congestion and improvement of the circulation in the diseased area as a result of suspension.

A CASE OF SARCOMA OF THE OVARY; OPERATION; RECOVERY.[1]

BY MILES F. PORTER, M.D.,
PROFESSOR OF SURGERY AND CLINICAL SURGERY IN THE FORT WAYNE COLLEGE OF MEDICINE.

MISS J. S., eighteen years old, consulted me on February 13, 1891, stating that for about a year she had noticed that her abdomen was growing larger. Menstruation was regular, though in the preceding few months the discharge lasted longer and "came a few days under time." For about three weeks prior to coming to me she had herself suspected the existence of a tumor in the abdomen. The general appearance was that of health.

On examination I detected a large, solid tumor, extending from the pelvis to a little above the umbilicus, movable, nodular, in front of and unconnected with the uterus, firm and doughy rather than elastic, not tender, and presenting no circulatory sounds. The uterus was retroverted from the pressure of the tumor, but was movable. During the examination the abdominal reflex was so decided as, at first, to be mistaken for fetal movements. Measurements showed the distance from the left anterior superior spine to the umbilicus to be half an inch greater than that from the right to the umbilicus. A diagnosis of ovarian sarcoma was made.

During the week of February 15th, the patient had, with an interval of two days, two attacks of severe abdominal pain, to subdue which required considerable morphine, and which were accompanied by a temperature of 100° F.

March 1. "Every now and then she has had a little sharp pain," which yielded to morphine.

7th. "She has had no severe pain, but has a little pain in the left lumbar region, which she never had before."

24th. Operation at 2 P.M., time, 1½ hours, much of which was taken in closing the wound, which had to be made eight inches long. The tumor removed was of the left ovary, solid and lobulated, with small but vascular pedicle. There were no adhesions; there was some ascitic fluid.

The pulse, which was 130 when the patient was put to bed, gradually grew better, and from the seventh to the twelfth day ranged from 69 to 84, when it went up to 90 and 98, and remained so for several days, although the temperature remained normal; the patient expressed herself as feeling well, and no cause could be found for the trouble. The highest temperature was 100.2° F., on the second day, but in twelve hours it subsided to normal, where it remained thereafter.

When at the end of seven days the stitches were removed, the wound was found practically healed, except at the point occupied by the drainage-tube.

A bulbous tube with lateral perforations, and closed at the end, was used; on its removal on the fourth day it was found that a portion of omentum had slipped through one of the perforations, the liberation of which required quite forcible use of the forceps. This annoyance might have been pre-

[1] Read before the Indiana State Medical Society, June 10, 1891.

vented by the employment of a tube without a bulb, for the latter makes it difficult for one to pack the gauze tightly enough to prevent portions of omentum slipping through the perforations.

The bowels were moved first on the seventh day by means of a glycerin suppository. The abdomen was scaphoid until after the tenth day, when it became more full, but not at all distended, from the resumption of hearty meals.

Two hypodermatic injections of morphine, grain ⅛ each, were given for restlessness, the first at the end of the first day and the other about the middle of the second. The use of the catheter was required but once at the end of the first twenty-four hours.

To relieve thirst an enema of plain water was given seven hours after the operation and was retained. The patient was allowed to sit up on the fifteenth day and on the twentieth went down stairs and into the yard. At the present writing—May 10, 1891—recovery seems perfect.

On macroscopical examination and section the tumor proved to be solid, with two spots of softening, the consistency of which approached that of brain tissue, and one cyst, the size of a hickory nut. The tumor weighed 7½ pounds.

Excepting the consistency which was greater, and the lobulation, the gross appearances of sarcoma as given by Howel,[1] fit this case exactly. He says: "Ovarian sarcomata are not so irregular in their shape as proliferating cystomata, being usually of oval or roundish contour; their surface is smooth, as a rule, and of whitish or pinkish-white color; while in consistence they are generally, though not always, quite firm, the round-celled variety being soft and brain-like."

Microscopical examination of four sections taken from the surface of the tumor failed to show anything but fibrous tissue, but on examining sections of the growth taken from nearer the center we found that we had a round-celled sarcoma. This shows the necessity of examining sections from various parts of a tumor before deciding as to its nature. I am under obligation to Dr. Howard McCullough for his assistance in the examination of the tumor.

The variety of the disease is in itself sufficient excuse for reporting this case; besides, the case is in most respects beautifully typical and at the same time presents some peculiar features.

Greig Smith[2] says: "Of all tumors of the ovary probably not more than 3 per cent. are solid. Most of them are malignant sarcoma or cancer." Skene, in his recent work, says practically nothing on the subject of solid malignant tumors of the ovary. Lee, in his article in the *International Encyclopedia of Surgery*, says: "True sarcoma is yet more rare than pure fibroma." While this statement is not in accord with the opinions of Smith, Tait, Doran, and others, yet it seems borne out by the statistics of Seeger, of Munich[1], who among 13 cases of solid ovarian tumors found 4 of fibroma, 3 spindle-celled sarcoma, 1 round-celled sarcoma, and 5 of solid carcinoma.

The age of the patient, the rapidity of growth of the tumor, its solidity and nodosity, as determined before operation, with the ascites and vascularity of the pedicle, as found at the operation, taken together, made the diagnosis almost certain without the use of the microscope. Then, too, there were attacks of colicky pain, which are so frequent in cases of this kind. One vein in the pedicle was so large as to raise the question as to whether or not it was a part of the small intestine.

I do not know whether the abdominal reflex is apt to be particularly exaggerated in malignant disease of the ovary. Certain it is, that when so marked as it was in this case, it might on hasty examination easily be mistaken for fetal movements. Such a mistake would be still more likely if, with the exaggerated reflex, there was also a vascular bruit, such as is common in solid tumors.

Another rather unusual feature of the case was the location of the tumor, in front of the uterus. While it was possible to move the tumor slightly, the tension of the abdominal walls rendered its mobility much less than would be expected from the absence of adhesions and the length of the pedicle. No lateral enlargement having been noticed and the abdomen being nearly symmetrical when seen by me, I was unable, until the abdomen was opened, to tell from which side the tumor grew. That no tumor was noticed by the patient before the late period indicated seems to me almost incredible.

This was the first time I ever used a bulbous tube, and I shall never use one again, unless no other is at hand, because of the danger of incarceration of the omentum and the great degree of pain occasioned by the enlargement of the opening for the removal of the tube.

I wish to take this opportunity to urge the general acceptance of the doctrine that all ovarian tumors should be removed early. One can never be sure that a given tumor is benign, and besides, a tumor that is benign to-day may be malignant to-morrow. According to Leopold, 22.4 per cent. of all ovarian tumors are malignant, while Schroeder makes the percentage 19.5.[2] From Seeger's statistics already given we learn that in all cases of solid ovarian tumors the proportion is as 9 to 4 in favor of malignancy. The general mortality of the operation for malignant ovarian disease is 33 per cent., while only

[1] Annual of the Universal Medical Sciences, 1890.
[2] Abdominal Surgery, second edition, p. 153.

[1] Annual of the Universal Medical Sciences, 1890.
[2] Greig Smith: Abdominal Surgery, second edition, p. 154.

5 out of 47 cases were alive and well after three years.[1] According to Beigel[2] "Baker Brown's case appears to be the only one of round-celled sarcoma cured by operation."

While these results are not brilliant, yet it should be remembered that each case cured represents a clear gain of one life. Nor is this all, for in those cases in which there is recurrence after operation "the subsequent course will be less painful than in cases not interfered with."[3]

100 FAIRFIELD AVENUE.

PERINEAL ABSCESS FROM AN UNUSUAL CAUSE.

BY W. M. L. COPLIN, M.D.,
OF PHILADELPHIA.

ON May 23, 1891, D. G., a laborer, of remarkably vigorous constitution, married, with no history of previous illness, called at my office to consult me about what he termed a burning, smarting irritation of the anus, associated with intolerable itching and pain at stool. He stated that the symptoms came on suddenly, and annoyed him so much that on the previous day he had to give up his work. Upon examination there was slight erosion of the rectal mucous membrane at one or two points, evidently due to the scratching. There was no evidence of fissure, no induration or tenderness in the ischio-rectal fossa nor of the perineum. A saline purge and suppositories of cocaine and tannin, together with an ointment of cocaine and carbolic acid, were ordered. A digital examination of the rectum revealed nothing. On the following day I was called to visit him at his house. The pain had increased, he had slept none all night, had passed no water, and complained of severe pain in the region of both kidneys; at intervals during the night he had vomited freely; his skin was covered with perspiration, and he had considerable headache. The rectal symptoms had not abated, and upon examination nothing further could be elicited. Percussion over the bladder showed it to be empty. This was verified by the introduction of a soft catheter and the withdrawal of about one-half ounce of thick mucus, but no urine. The perineum seemed hard, and on deep pressure somewhat tender. I re-introduced the catheter to find just where the obstruction was, and found that the instrument met with no resistance until after the membranous portion of the urethra was reached, at which point the patient flinched, and considerable force was necessary to secure complete introduction. The patient was seen the same evening, and the symptoms not having abated, his consent was obtained for an operation on the following day. With the assistance of Dr. Hearn and Dr. Wilkinson I operated as follows: The patient was placed in the lithotomy position, the perineum and adjacent parts shaved, and some induration was found slightly to the right of the raphe, and extending across the median line about midway between the rectum and the scrotum. There seemed to be slight fluctuation, but of this I was not positive. The incision was exactly that made in left lateral lithotomy, and was extended well backward toward the rectum and slightly to its left. The incision was slowly increased in depth until it was one and one-half inches deep, when a small amount of gas escaped, followed by a free exit of pus. The opening was enlarged by Hilton's method until two fingers could be easily introduced. This allowed of free exploration, which developed the fact that the abscess extended beyond three and a half inches, up between the rectum and nearly around the latter organ. The prostate was entirely bare, and the urethra, at least one-half exposed, could be felt in the membranous portion. In making this examination a firmly adherent foreign body was detected at the extreme upper margin of the cavity. This, with great difficulty, was detached by the finger-nail and removed by means of an ordinary hemostatic forceps. It proved to be a fish bone, one and one-sixteenth inches in length, at one end sharply pointed like a needle. Careful examination did not reveal where the bone had made its exit from the alimentary canal. The wound was washed out with a 1 : 1000 corrosive sublimate solution, and packed lightly with bichloride gauze; a 1/3 grain morphine suppository was introduced into the rectum, and the wound covered with a large bichloride gauze pad, retained by the ordinary T-bandage. The operation was completed at 4 P.M., at which time but two ounces of urine were drawn off. At 6 P.M. I drew off fourteen ounces, and at 2 A.M. the following morning he voided twelve ounces more. Since then the catheter has not been used. He is progresssing nicely, and sleeps and eats as if nothing had happened.

The noteworthy points in this case relate to (*a*) the cause; (*b*) the location; (*c*) the effect upon the excretion of the urine.

(*a*) Foreign bodies in the rectum are not uncommon, the folds of Houston[1] being well adapted to their arrest and subsequent ulceration into the peri-rectal tissues. As a rule, when perforation occurs the ischio-rectal fossæ suffer, and the perineum rarely, although such cases are not unknown; fortunately, however, this perforation is low down, and rarely affects the bladder and its appendages. When we take into consideration the quantity of fish consumed, and the probable number of bones that accidentally pass into the stomach, one must consider it fortunate that these cases are not more common.

(*b*) The location of an abscess beginning so high up between the bladder and the rectum presents some points worthy of consideration. When it is remembered that the bladder is covered very low down by the peritoneum one cannot but be struck by the dangers of abscess arising so high up. This is more especially the case when the cause is one

[1] Loc. cit.
[2] Annual of the Universal Medical Sciences, 1890.
[3] Greig Smith, Abdominal Surgery, second edition, p. 154.

[1] Dub. Hosp. Reports, vol. v., p. 163.

that may perforate the bladder itself, thus adding a serious complication to the already infected tissues. The dangers are further increased by the process being above the tense bands of perineal fascia, thus binding the accumulated pus above the most favorable seat for egress, and leading to its upward burrowing and honeycombing the perirectal tissue without presenting as an abscess, either perineal or ischio-rectal—for in this case the only evidence of an abscess was deep-seated induration, no superficial redness, edema, or fluctuation; indeed, there was an absence of all local inflammatory symptoms.

(*c*) The effect upon the discharge of urine. In the ordinary acceptance of the word there was not retention of urine; still, according to a truer conception, retention was present. The pressure upward and forward had occluded the ureters and led to retention above that point, thus producing the excruciating pain in the region of the kidney, and leading to other symptoms. It is possible that a case might present itself in which the retention in the ureters and above might lead to more severe systemic conditions, with less local evidence. In case of inflammation high up between the rectum and bladder, the character of the pain might lead us to suspect either acute inflammatory changes in the bladder or the lodgment of a renal calculus in the ureter at that point. Such an error in diagnosis would certainly lead the patient into danger that might not be seen until serious injury had been done. The probable establishing of suppurating conditions so near the recto-vesical fold of the peritoneum might lead to infection of the general cavity, with the inevitable consequences.

In the estimation of the writer the conclusion to be arrived at is, that all such conditions should receive early and prompt treatment, seeking if possible to find the cause and remove it if feasible, and certainly to release the tension of the perineal fascia. It is unnecessary to mention the promptness with which the surgeon attacks suspected ischio-rectal suppuration, and cases such as the one here reported most certainly demand equally prompt attention, exploratory incision being perfectly justifiable, indeed demanded, in all doubtful cases when the symptoms are increasing in severity or are even stationary.

IT is the common every-day ailments and their effects and treatment that the student wants to become familiar with at first, rather than the rare cases. Cases of colic, of effects of over-eating or drinking, of sore-throat, croup or diphtheria, or scarlet fever, or mumps, of the ordinary fevers, of simple fractures or dislocations, of bad cuts of the palm of the hand, are far more important to him from a business point of view than brain tumors or ligations of the innominate artery.—JOHN S. BILLINGS, "*Ideals of Medical Education.*"

ORIGINAL LECTURE.

MITRAL STENOSIS—HEMIPLEGIA—ATHETOSIS—HEART-FAILURE AND PREGNANCY—TYPHOID FEVER—LOCOMOTOR ATAXIA.

Abstract of a Clinical Lecture
Delivered at Bellevue Hospital, New York.

BY E. G. JANEWAY, M.D.,
VISITING PHYSICIAN.

MITRAL STENOSIS.

GENTLEMEN: Our first patient is a woman, thirty-eight years of age, who has not had rheumatism, chorea, scarlatina or pneumonia, yet she has been troubled with cardiac palpitation on slight exertion for a period of eighteen years. Her sister and mother both suffered from heart disease. She has been married, and has had two children. On examination we find that the apex-beat is carried a little to the left and upward, but the upward displacement may be due to lying on her back. Palpation shows the beat of the left ventricle to be about normal, but that of the right ventricle is increased. On auscultation I hear a mitral presystolic murmur, which is also heard at the back, and the pulmonic sound is intensified. The patient came into the hospital, not on account of the heart trouble, but for a synovitis of the knee, which is apparently of rheumatic origin. In her childhood, she may have had that peculiar condition of the heart that is so often associated with rheumatic constitutions. Children of this type often have a distinct murmur over the heart, and will frequently suffer from what are called "growing-pains." Her mitral stenosis is compensated for, and is therefore not troubling her. Along with the administration of the usual anti-rheumatic remedies, which are indicated in this case, we shall give her iodide of potassium, since there is a suspicion of inherited syphilis.

HEMIPLEGIA.

This man has paralysis of the right arm, that has developed since his admission to the hospital. No satisfactory history can be elicited from him. Auscultation of the chest reveals a distinct systolic thrill, a loud, rough murmur at the apex, heard also behind, and a slight systolic murmur at the base. The thrill is felt over the left ventricle. It is very probable that a vegetation, breaking loose from the heart, has plugged up a blood-vessel in the brain, and it is quite possible that the mischief so produced has been still further increased by a thrombosis. You notice that there is great rigidity of the neck, and this is commonly considered to be indicative of meningitis. It is not always so, however, for I have seen it in edema of the brain in alcoholic subjects, in patients with cerebral tumor, and in cases of abscess of the sphenoidal lobe. If this case be one of meningitis, it is probably secondary to embolism and consequent cerebral softening; or the irritation so produced might account for the rigidity. Let us look for further evidences of embolism. We find a few petechial spots on the limbs and body. As the tongue is an organ that is *pushed* out by muscles, it deviates *toward* the diseased side, and in this case it is more markedly affected than the face. There is a little dribbling of saliva on one side, and the paralysis is rendered much more evident

by asking him to drink a little water, when the dribbling of water from the paralyzed side becomes quite apparent.

ATHETOSIS.

Let me now show you a man exhibiting that peculiar condition usually spoken of as athetosis, but more accurately described by the name, post-hemiplegic chorea. Sometimes this condition is the result of a strain upon the vessels of the neck, and sometimes, and not uncommonly, it is due to hemorrhage consequent upon forceps delivery. This man says that he was "born paralyzed," and so it is probable that at the time of delivery there was a hemorrhage into or upon the brain, that gave rise to his trouble. You notice that there is no weakness about the muscles of the right arm, the one affected, but, on the contrary, they are well developed. But on endeavoring to grasp an object with the right hand, there is a want of coördination between the different sets of muscles, and the flexors overpower the extensors, giving rise to a peculiar twisting of the hand and a stretching forth of the finger. There is also a slowness in the volitional movement, and a choreiform agitation. There is no special difference in the patellar reflexes. There is probably a sclerosed area on one side of the brain, and a more diffused impulse goes out from the brain than is normal. Medication is, of course, of no avail.

HEART-FAILURE AND PREGNANCY.

Our next case is that of a woman, who says she is thirty years old, although her appearance would indicate that she was about forty-five. It is impossible to obtain a very satisfactory history from her, but since she has been in the hospital she has had three attacks of heart-failure, with congestion and edema of the lungs, each of which has lasted for some time, and has been accompanied by bloody, frothy expectoration, and a rapid, feeble heart. The first attack lasted twenty-four hours, the second, two days, and the third, twenty-four hours; and in each instance she was promptly relieved by the administration of stimulants. I saw her in one of these attacks, when there was cyanosis, with a rapid, feeble heart-action, and an abundance of moist râles in the lungs. She is six months pregnant, and she tells us that about three years ago, when at the same period of pregnancy, she was troubled in the same way. These seizures are typical of a class, of which I have seen several examples, in which there was mitral stenosis.

On examining her, I find an intensified second sound, which is important as indicating increased tension in the pulmonary system. When examining her yesterday, I found a distinct systolic murmur at the mitral orifice, and the probabilities would favor the existence of this condition; but to-day I hear no distinct murmur at this point, and at present there is only a want of compensation that, with the coexistence of pregnancy, would explain the feebleness of the heart. To make an absolute diagnosis, it would be necessary to watch her from day to day for some little time. I saw last night in private practice a patient, also pregnant six months, who had fluid in both pleural cavities, and, as in this case, an intensified pulmonic sound. Two doses of digitalis brought the heart down from 90 to 80, cleared up the edema of the lungs, and brought out a well-marked presystolic murmur at the mitral orifice, indicating mitral stenosis. Of course, in considering the matter of treatment, the question of the advisability of inducing premature labor presents itself, and it is one that is difficult to answer; so many delicate questions are involved in it that each case must be carefully decided upon its individual merits. Since this patient has been in the hospital, digitalis has been freely administered, and it has controlled the rapidity of the heart's action and has diminished the pulmonary congestion. Hot applications have also been used over the region of the heart.

TYPHOID FEVER.

I would call your attention next to this man, who is a waiter by occupation, and who, on admission, gave a history of having been sick for about fourteen days with fever, chills and constipation. On admission, his pulse was one hundred, and his temperature 105°, but later in the day his pulse went down to 78, and since then has been a little higher. The day after his admission two or three spots of roseola were found upon the body. The spleen was also found to be enlarged. A dose of castor oil was followed by diarrhea. The last temperature noted is 102°, and only once has it been below 103°. We have, then, a history of continued fever, of splenic enlargement, and of a rather excessive action from an ordinary dose of castor oil. Since his admission he has had yellow diarrheal movements. His tongue is only moderately coated. You notice that his face is flushed and somewhat mottled. By drawing a line with the finger on the skin of the forehead, a red line slowly develops, and this can be observed on other parts of the body. Now, this phenomenon has been looked upon by some observers as pathognomonic of meningitis, and it is therefore often spoken of under the name of the *tache cerebrale*. But, although it is commonly found in cases of meningitis, it is also not unusual to find it in pneumonia and in typhoid fever; and it would have been found in these diseases long ago had it not been that no one thought of looking for it in these conditions. This patient shows this test pretty fairly, and yet there is no evidence of meningitis; there is no rigidity of the neck, and his mental condition is pretty fair. This sign, considered by many so important a factor in the diagnosis of meningitis, is utterly fallacious. This patient gives us the history and signs of a fairly plain case of typhoid fever. I wish you to notice that there is no herpes on his lips. Herpes may be found in a great many febrile conditions, but it has been my experience that it is not seen in typhoid fever; in fact, if I found herpes present, it would require very convincing evidence to make me believe that I had a case of typhoid fever to deal with. This patient has been taking a moderate quantity of stimulants. If his fever remain rather high, I would advise the systematic employment of baths, beginning with a temperature of 96°, and cooling it down to 70°, or placing him in a bath at 70° for about ten minutes, and then taking him out and rubbing him down thoroughly to favor reaction. These baths effect an immediate reduction of the temperature, and subsequently a still greater reduction. In considering the question of diagnosis, you may have noticed that I did not examine for gurgling in the iliac region, and I omitted it intentionally. It is unwise to teach students to make pressure in the iliac region in order to elicit this sign, for the ulcers

are sometimes deep, even at this stage of the disease, and a little rough or careless manipulation may very easily cause rupture of the intestine. It is better not to employ this test, as the diagnosis can be made in other ways.

LOCOMOTOR ATAXIA.

Let me now for a moment direct your attention to this woman, who comes to us complaining of sharp, localized pain over the right temple, and with a history of having suffered from migraine or sick-headache for a period of many years. Most physicians would at once think of prescribing antipyrine, antifebrin, exalgine, or some medicine of that class, and nitro-glycerin is a favorite remedy with many. But in such cases as this, where there is flushing of the face, you should not use a remedy like nitro-glycerin, that dilates the capillaries; on the contrary, ergot would be more appropriate. But in addition to this patient's headache, she presents other important symptoms. The patellar reflex is absent, there is inability to stand with the heels together and the eyes shut, and in walking she constantly watches the movements of her feet. Sensation in the feet is both delayed and diminished, and an area of tactile anesthesia is distributed irregularly along the fingers of both hands. This patient has locomotor ataxia, and she comes of a somewhat neurotic family. We shall make use of no medication directed toward relieving the locomotor ataxia, but we hope to relieve some of her symptoms by a course of suspension, carried on in a manner similar to that employed when one of Sayre's plaster-of-Paris jackets is applied. The case will be watched with interest, and I hope in a few weeks to be able to show what results have been obtained by this method of treatment.

CLINICAL MEMORANDUM.

INTRA-LIGAMENTOUS CYST, WITH TWISTED PEDICLE, CAUSING INTESTINAL OBSTRUCTION; LAPAROTOMY; RECOVERY.[1]

BY THADDEUS A. REAMY, M.D.,
OF CINCINNATI, OHIO.

THE following communication from Dr. A. B. Isham, of Cincinnati, furnished by request, properly introduces and becomes an important part of this brief report:

"In the forenoon of December 15th I was called to see a young lady, aged twenty years, of ruddy complexion and exceptionally fine physique, who gave the following history: On Wednesday afternoon, December 10th, while dressing, she had sharp abdominal pain, between the umbilicus and pubes, which gave great distress for some minutes. She felt a sense of uneasiness afterward, but was not much disturbed until in the night, when she was taken with vomiting, severe abdominal pain, and had several small, thin discharges from the bowels. There was great abdominal soreness on the 11th, 12th and 13th, which diminished on the 14th, so that she was able to dress herself and sit up. At the time of my visit on the 15th, she was prone upon her back, with the knees drawn up; she had an anxious expression of countenance, and exhibited very great tenderness to touch and pressure over the abdomen, particularly in the right iliac region, where there was a hardened mass of considerable size extending beyond the median line to the left side; the abdomen was somewhat tympanitic. The temperature was 100.5°, the pulse 110. I took it to be a case of appendicitis, with fecal impaction of the cecum, and ordered one pint of olive oil to be taken in four hours, in divided doses of two ounces every half-hour. At my afternoon visit the oil had all been taken, but without effect. I administered four injections of two quarts each of warm water, which came away slightly discolored, but brought nothing with it. I then ordered Epsom salts in teaspoonful doses dissolved in warm water every hour. In the night the salts were vomited, and further administration was stopped. Tuesday morning, December 16th, the pulse was 120, the temperature 101°, the tenderness and tympanites increased, and no stools. I administered more two-quart injections of warm water, without result except that oil globules floated upon the surface of the water returned. The temperature was now 102°, pulse 125. I announced that in all probability surgical operation was the only resource, and asked for consultation with Dr. Reamy, which was assented to. The consultation was held at 3 P.M., and operation decided upon, awaiting, however, the parents' consent, who were at Marietta, and had been telegraphed for. A hypodermatic injection of morphine was given to quiet the patient, under which she rested quietly up to the time of the operation at 9.30 A.M., December 17th."

As stated by Dr. Isham, the patient was a young woman of perfect form and physical development. She was at the time of the attack in robust health. Her menstruation had been painless and normal. She had not noticed any change in her size or form. Neither her under-clothing nor over-clothing had been altered to conform to any demand in this direction. These facts are somewhat striking in the light of the following disclosures:

Laparotomy: There were present and assisting, Drs. Isham, E. W. Mitchell, W. D. Porter and Charles L. Bonifield. Etherization was without difficulty, and a median incision three and one-half inches in length was made. Some bloody serum escaped from the peritoneal cavity. I found a cyst, which proved, on removal and examination, to be intra-ligamentous, and arose from the left broad ligament. It was twice as large as my clenched fist, and was markedly lop-sided, though not lobulated. Its pedicular attachment was very near to the uterus. Its pedicle seemed so short as to render lifting it out impossible. The shortness of the pedicle was subsequently found to be due to a twist of the same. The cyst was opened, and partly coagulated and fluid blood, with the ordinary fluid found in intra-ligamentous cyst tumors, was turned out. At one point, near the pedicle, a small rupture had occurred in the wall of the cyst, through which some blood and other fluid had escaped into the peritoneal cavity. Even after the cyst was emptied, it had to be turned once around so as to untwist the pedicle before it was long enough to allow of ligation. It was ligated with silk, the cyst cut away, and the pedicle dropped. The ovary was not enlarged, nor apparently diseased, but the Fallopian tube was somewhat distended. I removed the left ovary and tube.

The mystery of the case was now cleared up. I have

[1] Read before the Mitchell Medical Society, July, 1891.

already spoken of the tumor as lop-sided. Its chief growth had been rapid, and, of course, recent, and was due to the twisting of the pedicle, which was so complete and sudden as not only to arrest the venous return of blood from the tumor, but to cause hemorrhage. Its sudden tension and rotation under these circumstances carried its larger projection over to the right side of the abdomen, where it pressed upon, displaced and completely obstructed the cecum, colon and ileum. It had crowded the cecum and ileum out against the iliac bone. It had gone under and behind the ileum and cecum, pushing the former up alongside of the ascending colon; indeed, it may be said to have lain parallel with the ascending colon, while the cecum was pushed up at an acute angle with the colon. The greatest flexure was thus at the point of entrance of the ileum with the large intestine.

It is scarcely necessary to add that these flexures resulted in complete obstruction of the ileum and large intestine. The mass was large and firm. The cecum, colon and ileum were quite discolored, showing the effects of strangulation. The vermiform appendix, in this instance about three and a half inches in length, was turned upward in front of the cecum, and was somewhat unhealthy. It was by no means so deeply discolored as the cecum, ileum and colon. It had probably been displaced forward, out of its usual position behind the cecum, during the rapid invasion by the tumor.

The extent and character of the displacements here described would seem almost incredible in view of the fact that both cecum and colon were filled with fecal matter, and that the ileum was likewise much distended. The condition is all the more difficult to comprehend when the anatomical facts are recalled that notwithstanding the lower end of the cecum lies free in the abdominal cavity, and is susceptible of considerable mobility, yet it is completely invested by peritoneum that is reflected from its sides on to the posterior abdominal wall. It is almost incredible that under the circumstances it could have been forced up as it was.

Irrigation of the abdominal cavity with warm water was immediately commenced. During the process, with my fingers through the incision, I restored to mormal position the displaced portions of the intestine, and made gentle upward pressure upon the colon and cecum, with slight compression. At the same time, Dr. Isham injected warm water into the rectum, the patient having been drawn to the end of the operating-table. Immediately, I could feel the fecal masses ascending the colon, and soon all was clear, copious stools immediately occurring.

The obstruction removed, the discoloration of the intestinal walls could be seen through the abdominal incision rapidly subsiding. Undoubtedly, the warm water aided in this result. A glass drainage-tube was inserted and allowed to remain thirty-six hours. The abdominal wound was closed with silk sutures, adhesive straps were applied, and dry pads of cheesecloth, without antiseptics, with bandage of the same goods, furnished the dressing. Recovery was uneventful and complete.

REMARKS.—The clinical history of this case presents some facts that command consideration. In my judgment, the most important is that not from choice on the part of Dr. Isham and myself, but from necessity (waiting for the arrival of the parents and their consent), the operation was postponed twelve hours from the time that we considered it imperative. It is needless to add that we believed each of these hours a serious loss of chances for success. Whether this is true is now subject to doubt. When we left the patient in the evening, the pulse was rapid, irritable, the temperature high, the countenance anxious, markedly pinched, the breathing rapid, the pain excruciating, the abdominal distention well marked. Under a full dose of morphine, hypodermatically, six hours of uninterrupted and deep sleep followed, so that in the morning when we arrived for the operation, the patient was free from pain, and the countenance bright and hopeful. Tympanites had somewhat subsided, the pulse was reduced, and the temperature lowered. All this under morphine and with the bowels hopelessly obstructed. It is my belief that the chances of recovery were improved by the delay and the morphine. Much care must be taken in weighing all the facts in any similar case before arriving at conclusions.

As I think, with more reckless audacity than cool judgment and good breeding, some operators now denounce and brand as coward any surgeon who advocates waiting in any case where the necessity for a laparotomy seems to be probable. They argue that delays are always dangerous, and in such cases do they especially denounce under any pretext the use of opiates.

I think that this case is very instructive. It certainly shows that even in a case where the only possible chance of recovery is a laparotomy, there may be safety in delay.

Though I have seen several examples of twisted pedicle in ovarian tumors, this is the only example seen in an intra-ligamentous tumor. I think such accidents to this class of cysts quite rare. In any case, since twisting depends upon dragging, it is exceptional to find twisting of so short a pedicle.

Again, since an unusually large bloodvessel entered deeply into this tumor, as shown on examination of the pedicle, it is interesting to inquire whether all the hemorrhage that occurred took place after the twisting and strangulation, or whether sudden hemorrhage may not have taken place into the cyst prior to the twist, causing a sudden and irregular dilatation of the cyst, which, in turn, caused the rotation.

The case also illustrates the fact that growths in the pelvic cavity may attain a considerable size without impairment of health, without local or constitutional symptoms, or anything, indeed, to attract attention to their presence. It must not be forgotten, however, that the increase in size from the strangulation was probably marked, therefore the tumor, previously, comparatively small.

Finally, the case emphasizes the difficulties and uncertainties of diagnosis. The clinical history and physical examination alike pointed to acute appendicitis, with inflammatory obstruction of the cecum.

THE cost of the paupers in the public institutions of New York in 1890 was $1,949,100. The cost in private institutions from public funds was $1,845,872, making a total of $3,794,972.

CURRENT LITERATURE.

CEREBRAL ACETONEMIA IN A CASE OF ACUTE ARTICULAR RHEUMATISM.

Talamon (*La Médecine Moderne*, No. 14, 1891) states that since the appearance of the papers of Petters and Kaulich, a group of nervous symptoms comparable to those of uremia has been described under the name of acetonemia, a condition characterized by a reddish color imparted to the urine on the addition of perchloride of iron, and by the peculiar acidity of the breath, which exhales an odor that has been compared to that of chloroform, and which, in reality, is the odor of acetone, or of ethyldiacetic acid. Petters, Kaulich, Cantani, Küssmaul and Lecorché have admitted that the nervous symptoms were due to acetone acting upon the organism in the same manner as chloroform. This opinion has been combated by Jaksch and by Frerichs. The precise pathogeny of this toxemia, however, has not been chemically elucidated any more than has that of uremia or of cholemia. The substance which, with the perchloride of iron, causes the red reaction in the urine may be ethyldiacetic acid (Gerhardt), or diacetic acid (Jaksch). The symptoms of poisoning may result, not from the isolated action of one of these substances, but from a series of chemical decompositions, of which the acetone and diacetic acid are but ultimate products of little importance. The solution of the chemical problem of uremia is not more certain; urea plays but a small part in the genesis of the phenomena called uremic; this need not, however, preclude the description and distinction at the bedside of the morbid phenomena grouped under this name. It is just as incontestible that there exists a clinical condition characterized—1. By various nervous phenomena; 2. By a special reaction of the urine; 3. By an odor of acetone in the breath—a group of symptoms that, whatever their real pathogeny, may be comprehended under the name of acetonemia.

Acetonemia has especially been observed in diabetes and in diabetic coma. Petters and Kaulich have, however, noticed that the odor of the breath and the reaction of the urine are observed, not only in diabetics, but also at times in the course of the eruptive fevers, in children with measles and scarlet fever. The researches of Jaksch have confirmed this observation, and have shown that normally the blood and the urine always contain traces of acetone, the quantity of which may be increased in the pyrexias and in different chronic maladies, particularly carcinoma. Jaksch recognizes three varieties of acetonuria: the diabetic, the febrile and the carcinomatous. According to him the nature of the febrile process is a matter of indifference; he has noticed acetonuria in pneumonia, typhoid fever, in acute articular rheumatism, and in the eruptive fevers. He has even observed pronounced acetonuria in a case of mania without fever. Acetonuria or diaceturia may thus exist without acetonemia; in other words, the red reaction of the urine with the perchloride of iron may be produced in the absence of symptoms of acetonic toxemia.

Talamon relates the case of a girl of fifteen, with a history of an attack of acute articular rheumatism with endocarditis, who six years previously was seized with intense fever. On the fifth or sixth day the temperature reached 105.8°, and the girl presented a condition of marked nervous excitement and delirium, almost maniacal. This delirium, characterized by incessant agitation and terrifying hallucinations, coincided with an odor of acetone in the breath and a ruby-red reaction of the urine with the perchloride of iron. It lasted five or six days and disappeared synchronously with the disappearance of the odor of acetone in the breath. At the expiration of some days a second articular attack followed, quite as intense as the first; but the odor of acetone did not reappear and the delirium was not produced. Talamon believes that the acute delirium in the first event was related to the odor of the breath and to the reaction of the urine, and that it is to be attributed to cerebral acetonemia.

There are, however, certain objections to such an hypothesis. The delirium may have been toxic, a result of the action of the salicylic acid administered. Talamon, however, is skeptical as to the occurrence of such a delirium in an adult, and more so in the case of a child. Conceding, however, that such a delirium may occur, in the present instance the patient was already in a state of abnormal over-excitation before the administration of the drug was begun, while the drug was continued without change of dose and the delirium was not only not aggravated but disappeared at the end of some days. In the second event the same dose (90 grains of sodium salicylate) was taken for six days without the appearance of any phenomena of delirium. Again, the delirium may have been a manifestation of cerebral rheumatism. Delirium may occur in connection with hyperpyretic rheumatism, or with rheumatic meningitis. The latter can be excluded by the symptoms. As to the former, the temperature was not unusually high. Contemporaneously with most of the delirium, the condition of the patient was almost apyretic.

From a study of the case reported and from a review of the literature of the subject, Talamon concludes that —(1) Certain of the nervous phenomena that appear in the course of acute febrile diseases may be attributed to acetonemic intoxication; (2) These acetonemic phenomena, which in one case were gastro-intestinal, with collapse and somnolence, and in another included delirium with excitations and hallucinations, are characterized by the peculiar odor of acetone in the breath and the ruby-red reaction that the urine presents with the perchloride of iron; (3) The delirious acetonemia of articular rheumatism may simulate cerebral rheumatism, from which it is to be distinguished by the absence of hyperpyrexia and by the characteristics of the urine and of the breath.

RETENTION OF URINE OF NERVOUS ORIGIN, AND VESICAL NEURASTHENIA.

Guyon calls attention to the large number of patients consulting the surgeon, who complain of constant difficulty in micturition, but who present no appreciable lesion of the urinary apparatus. Patients with well-defined lesions in the urinary tract are often utterly unable to evacuate the bladder, and suffer retention of urine, more or less complete. On the other hand, such a degree of functional impairment is exceptional in those in whom no lesion is detectable, although appreci-

able derangement of micturition may be present. Guyon reports three illustrative cases that have recently come under his observation, two in men and one in a woman. In the case of the first man, thirty-four years old, there was a history of gonorrhea six years previously. Two years prior to his admission into the hospital he had acute retention that yielded after some hours of manipulation with a fine bougie. Since then he had urinated with difficulty, the urine passing in a small stream. The symptoms increasing, he entered the hospital after not having passed urine for thirty hours. On passing a sound, it was found that the anterior portion of the urethra was free, but that the instrument was arrested beneath the pubes, and it was only after repeated efforts that a filiform bougie could be introduced into the bladder. The urine that was discharged was perfectly clear. Examination showed that the testicles, the epididymis, and the deferent canal were in a normal condition. The prostate was small and nodular; the seminal vesicles were also nodular. There was manifestly a profound genital tuberculosis without involvement of the testicular apparatus. Guyon, who never fails to make rectal examination in cases of this kind, has a number of times made similar observations, which are not in accord with the views of surgeons generally, who claim that genital tuberculosis begins in the epididymis. By rectal touch a more thorough investigation of vesical sensibility is possible than by any other means. In the case in question, there was no cystitis and no urinary tuberculosis. The existence of genital tuberculosis, however, was positive. An examination of the bladder was made by means of the manometer of Duchastelet, and a lessening of the vesical sensibility was found, together with a very notable diminution in the contractility of the bladder. An examination of the nervous system did not reveal any somatic nervous stigmata, but revealed a neuropathic condition that was made evident, among other phenomena, by an excessive sensitiveness, so marked that the patient was moved to tears upon being interrogated. The patient also gave a history of hereditary tuberculosis. Urethral spasm was evident, and was associated with a symptomatic spasm, probably dependent upon a genital tuberculosis. The retention of urine was of nervous origin, the vesical sensibility not being exaggerated.

In the case of the second man, there had for a year been difficulty in micturition of gradually increasing intensity. He could with difficulty urinate in a stooping posture; to induce a more abundant expulsion of urine, while still in the stooping position, he was compelled to exert firm pressure with the hand upon the perineum, at the same time bending forward. There was no evidence of a medullary lesion, no anesthesia, no hyperesthesia, no modifications of sensibility, no history of inherited disease. The patient, however, had always been subject to intense pains in the head. He had frequent attacks of depression and melancholia, without any appreciable cause. Most careful examination failed to detect any disease of the urinary apparatus. The membranous portion of the urethra was not abnormally resistant. The urethra was perfectly normal, the prostate pliant and not enlarged. The bladder, examined with a metallic sound, was scarcely sensible to pressure and permitted distention. It emptied itself imperfectly and slowly without propulsion. Its contractility was undoubtedly enfeebled. There was no doubt that the trouble in this patient was nervous in origin—in other words, that it was an instance of true hysterical retention of urine.

From these cases it is evident that in man the retention of urine may be due to a spasm of the membranous portion of the urethra, but it remains to be proved that this may also be the case in women. This spasmodic condition may coincide with a diminution of the contractile power of the bladder. Hence, in the investigation of urinary retentions of nervous origin, a study of the vesical contractility should not be neglected. The participation of the bladder in the production of derangements of micturition is beyond doubt. This participation is, moreover, evident and always of great importance in other varieties of retention. The influence of nervous diseases, either slight or grave, upon the vesical contractility seems to be incontestable. Although the researches in this direction that have been made are far from complete, they already appear demonstrative. Various visceral neurasthenias have been described, including genital neurasthenia, but so far as is known a vesical neurasthenia has not yet been made the subject of any particular investigation. From its frequent occurrence and distinct clinical manifestations, it appears proper, however, henceforth to give it a place in the category of the visceral neurasthenias.—*Annales des Maladies des Organs Génito-urinaires*, March, 1891.

IT is not more than a hundred years ago that medicine claimed to have been a liberal calling, an intellectual pursuit, and even to-day its position as such is very inadequately recognized by the mass of educated men. Now, I venture to say that, as medical education is now given in the best schools, no profession has a better right to claim the title of an educated, intellectual calling, and no men have a better right to demand recognition as intellectual men, as men of trained reasoning faculties, than the physicians themselves. I see, in my position at the head of the university, which includes the department of liberal arts and several professional departments, that the educated community does not recognize this. And I exhort you, gentlemen, in all your various fields of influence to do your utmost to establish this just claim of the medical profession to the position of an intellectual calling and to establish the claim of this great body as a body of highly trained men who use to the best advantage for the community the reasoning faculty, the scientific power of the human mind.—CHARLES W. ELIOT, *President of Harvard University*.

I WELL remember the words spoken by President Eliot, if I mistake not, precisely twenty years ago, at this anniversary dinner, on the matter of the introduction of the three-years' graded course—words which have come true once, and which will again: "The first step toward obtaining an endowment is to deserve one." Our admirable new building, and subsequent gifts, are the proofs. We are sure, should we suffer in our efforts to do our duty by the community still more fully, that the community, and especially the profession, will stand by us.—DR. THOMAS DWIGHT, *of the Harvard Medical School*.

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COMMERCIALISM AND THE MEDICAL NEWS.

IN various ways, devious or direct, pert, pertinent, or impertinent, THE NEWS is being asked, or rallied, as to its future action under the threatenings of the homeopaths. It is said, and the inference seems logically justified, that these purpose a "boycott" of the works of the publishing house that issues THE MEDICAL NEWS, and that dire things mysterious and awful are impending—all because of a frank editorial criticism of the work of the Homeopathic Convention held at Atlantic City, that appeared in these columns some time since.

The matter has far wider significance and extent than pertain to any one medical journal or to any one publishing house, and at the slight risk of apparent egotism or Phariseeism it appears fitting to speak a few plain words of confession and resolution.

It has never been the policy of THE MEDICAL NEWS to allow itself to be prostituted to the book-publishing business. No rules, tacit or explicit, have ever been laid upon THE NEWS to limit or handicap its independence of judgment or action. Its sole aim is to serve the interest of its subscribers and to perform its duty to Medicine. The business of book-publishing is distinct, and is entirely capable of caring for itself without control, hidden or hinted, of editorial function. Any limitations of expression that would sacrifice conscience to finance and shape editorial judgment or utterance by conditions of fiscal cunning or prudence, would not be given or received. Wherefore, medical sectarianism and superstition, however powerful commercially, will find THE MEDICAL NEWS no subservient tool. It is the duty of the journalist of scientific medicine to expose quackery with merciless persistence. It is high time that medical periodicals were emancipated from slavery to medical charlatanism, and from commercialism, whether of the publisher, of the advertiser, or of the book-buyer. If the books of a publishing house have not merit to sell themselves let them remain unsold. If the buyer refuse to purchase a good book because of an irate prejudice, he has thereby devised a fortunate method of suicide—since ignorance is its own blessed reward and ends in its own undoing.

As regards books sent to this office for review, THE NEWS shows no partiality to any publisher, its own, or other. Such books are sent to conscientious and competent experts, and these are instructed to express their judgments utterly regardless of author or publisher. The anonymousness of the criticism is a further guarantee that impartiality and plain speech are encouraged.

We desire to be explicit and emphatic that the reading and editorial columns of THE NEWS cannot be used in any way whatsoever to further the interests of the publishers or owners of, or dealers in any books, instruments, proprietary medicines, foods, preparations, etc., etc. Commerce is one, medicine another and a different pursuit. The aim of the true physician must be to keep them distinct in so far as there exists the most remote tendency of the lower to dominate the higher calling. The manifold offices of the purveyors of the physician's armamentarium are noble if nobly filled, highly honorable, and upon them the physician is largely and gratefully dependent. But it may never be forgotten for an instant that the products of the book-publisher, the instrument-maker, and the pharmacist are tools, aids, and helpers, in the hands of a specially-trained intelligence. Shall the instrument dictate to the hand?

There died the other day an editor of a daily newspaper, who some years ago quietly refused the greatest material bribe probably ever directly offered to a man. It is good to know that in response to a self-imposed duty there has lived one that could

resist the offer of five millions of dollars in cash for the simplest and easiest of services—silence. It is, of course, ridiculous to compare little things with great, and yet one of the harassing and wearying things of every position of trust is the wariness and watchfulness one has constantly to keep up to avoid becoming the dupe of money-making schemers and of one's own selfishness. The bribe is so subtle, so indirect or so unblushingly direct, so easily accepted, the shirking of responsibility so small an affair!

Out of the whole there rises the clear and patent fact of the power and baneful influence of medical obscurantism. Our fathers have evaded their obvious duty and allowed the many-headed monster to grow until the folly and sin are appallingly evident, and, lo! it is found that the animal would—threaten! What means this perfectly sickening fact that in the grand old State of Massachusetts every form of besotted and delusional quackery is unrestricted by law and allowed to fatten itself on the ignorance and want and trustfulness of the poor, and of some of the more pitiable rich? Do what they will, the educated, the honorable and scientific leaders of medicine are unable to get any law passed limiting the practice of medicine to those showing the most rudimentary qualifications or fitness. Upon attempting it the horrid beast at once raises its hundred heads, and before its hissings and barkings the lawmaker's heart fails as he thinks of the next election.

And there, and everywhere, flourisheth—faith-cure (that never cures); Christian science (that is unchristian and unscientific — to emesis!); the laying on of hands (that are dirty); spiritism (without spirit); spiritualism (without spirituality); Hahnemannism (either with or without the itch, the high potencies, the succussions, the smelling of medicines, the divine *similia similibus* — either with or without, *comme vous-voulez!*); eclecticism (that chooses the follies); -pathies, -isms, and crankeries, that laugh at themselves, and lunacies galore!

Brethren, the longer the delay the more drastic the remedy. Compromise and shilly-shally will not avail. It is quite useless much longer to sing:

"O how
Shall we escape from this terrible cow?
We will sit on this stile
And continue to smile
And perhaps we shall soften the heart of this cow."

THE RULES AGAINST THE PUBLICATION IN MEDICAL JOURNALS OF PAPERS READ BEFORE SOCIETIES.

THEY should be rescinded! And for the following reasons:

1. Because in the present rapid advance of science, conclusions reached are often changed or modified by the author or by another investigator before the article is published in the regular Society Report. The Report is not delivered to the subscriber for several months or a year after the meeting has been held. Untrue science is not science. The official reports of the International Medical Congress held in August, 1890, have not yet been issued.

2. The weekly or monthly medical journal gives the article the desired publicity at once. Stale news is not news.

3. Because the medical journals have a larger circulation than the "Transactions" and Society Reports, and reach thousands of readers that would never see the complete article in the belated Society Report.

4. Because the best men will not consent to hide their best work in a Society Report when it can be given to a large audience at once through a medical journal. The result is that Society Reports are prone to become lumber-rooms of second or third-rate matter.

5. The manifest injustice of the by-law to authors, and its detrimental effect upon medical progress, to some extent at least excuses Society members for breaking a rule they either regret having thoughtlessly assented to, or that they more probably had no voice whatever in making. Those who rigidly observe the rule find their articles locked in the "lumber-room," while the papers of their colleagues are read by the great world that is determined to take and read the live medical journals of the present day.

6. If the public desires to know about an author's productions the medical newspaper will most certainly satisfy the demand. It is better that the author should speak directly to others than through the mediation of the stenographer. The author can give his own information more accurately than can the reporter. The rule forbidding a member to make his own abstracts for the medical press is outrageous. Every writer has a vital interest in being correctly reported.

7. The first law as to literary property is that an

author shall have the right to dispose of the products of his intellect as it pleases him. Personality should not be merged in the medical association. The Society is only one medium through which an original worker gives the world the products of his thought and experience. As in the outside world a lecturer reserves and preserves the right to print his lecture where he will, so Medical Societies are sufficiently rewarded by the spoken word and presence, without any claim to the manuscript.

8. The late-coming Society Report and "Transactions" are, as a rule, relics of by-gone days and "survivals" of out-lived habits. Before medical journalism attained its present development and perfection the Society Report was necessary, and satisfied the demand of its day. It does so no longer. The multiplication of first-class special medical journals gives the specialist the means of reaching those of his own guild throughout the world, and the large number of unexcelled serials devoted to general medical literature that every week and month supply the avid desire of myriads of widely scattered readers, are sufficient proofs that "the times have changed," and that "we must change with them."

A LITTLE FABLE.

ONCE upon a time there was a kind old lady that lived in a big country over the sea, and who raised a great many chickens. One fine morning the good old lady took her little grandson with her to see the chickens fed. The little boy thought it great fun, until they finally came upon an old hen that would not budge from her nest, but pecked at the grandmother most viciously. Then the old lady took her stick and drove the hen from the nest. Immediately the hen set up such a cackling, and screaming, and blustering of feathers, and flew at the grandmother so savagely, that the little boy was nearly frightened out of his wits. He had never heard such a noise! What a horrible thing it was, to be sure!

GRANDMA: Do not be frightened, my child, the hen is not dangerous. She has more feathers and noise than fight—hens do not bite, they only peck.

BOY: But what ails the hen, Grandma, and why does she make such an awful fuss?

GRANDMA: Nobody knows exactly what ails her, my boy; she is just an old settin' hen, that's all—I call her the old homeopathic hen.

BOY: What a name! What does "hommypatic" mean, Grandma?

GRANDMA: I am sure I don't know, and I guess nobody else knows. Perhaps it sounds like her cackling. A stranger one day said she was a homeopathic hen.

BOY: But, Grandma, there is only one egg in the nest. Do hens sit on one egg?

GRANDMA: Homeopathic hens do.[1] A great while ago this hen laid quite a number of eggs, and she sat on them a long time.

BOY: Did the eggs hatch out into chickens, Grandma?

GRANDMA: Not one of them, my boy. They were a sorry sort of eggs; according to the stranger-man, one was a "psora," or itch egg; another was marked "thirtieth dilution;" then there were "succussion" eggs; "high potency" eggs; "immateriality of disease" eggs; "smelling of medicine" eggs; and a lot more very, very curious eggs.

BOY: What fearful words, Grandma. What do they mean?

GRANDMA: Nobody could ever tell me.

BOY: What became of those eggs?

GRANDMA: After the old hen had sat on them for a long time, and they had begun to stink very bad, she herself kicked them out of the nest, and I had to hold my nose while I threw them away.

BOY: Why did they not hatch out, Grandma?

GRANDMA: They had no "tread" in them.

BOY: What is "tread," Grandma?

GRANDMA: It is a bit of fatherly kindness and help on the part of the rooster, that makes the egg capable of hatching out into a chicken, and thus becoming of some good in the world.

BOY: What is the rooster's name, Grandma?

GRANDMA: Some call him "Science," but a better name is "Common Sense."

BOY: The one egg still left in the nest, Grandma—what is that for?

GRANDMA: That is the nest-egg, and we leave that so the hen may lay more eggs.

BOY: Will the hommypatic hen lay more eggs, Grandma?

GRANDMA: No, my boy. I told you she was just an old settin' hen, and settin' hens don't lay eggs.

BOY: If she will lay no more eggs, why don't you take this one away?

GRANDMA: Alas! it is also rotten.

BOY: Has this nest-egg any name, Grandma?

GRANDMA: It is called the *similia* egg.

BOY: What does that mean, Grandma?

GRANDMA: It has absolutely no meaning, that I could ever learn. The stranger-gentleman didn't explain, and we cannot understand the language of

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[1] "The only 'certa' in the Master's teachings are the fundamental rule for the selection of the remedy, *similia similibus*, etc." (R. E. Dudgeon, M.D., of London, Honorary President of the International Homeopathic Congress, on "Homeopathic Certa and Dubia," quoted by Helmuth as "the belief of the Convention." See *N. E. Medical Gazette*, Aug., p. 392.)

hens, and so do not comprehend their own explanations.

BOY: If you take the simmily egg away, will the hommypatic hen still keep on settin' on nothing?

GRANDMA: O, yes, of course.

BOY: What a foolish hen! * * * * * * * — If you should throw cold water on the hommypatic hen, Grandma, would she still keep on settin'?

GRANDMA: Ah, my child! she has had more cold water thrown on her than would drown twenty sensible hens, but she keeps right on. She gets very mad when you throw cold water on her, or poke her up; but if you don't do it, she would starve on her addled old egg. She likes to flatter herself she is a great martyr.

BOY: Why don't you kill her, Grandma?

Hæc fabula docet—much or little, according to who the reader is.

SOCIETY PROCEEDINGS.

SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

Held in London, August 10 to 17, 1891.

(Continued from p. 279.)

PROFESSOR BROWN gave an exceedingly interesting demonstration of animal parasites, first treating the subject generally, and taking up the questions of symbiosis, mutualism, commensualism, and parasitism.

PROFESSOR RALLIET considered the subject of "Parasites Transmissible from Animals to Man." These parasites are vegetable or animal. The vegetable parasites included besides the bacteriaceæ or microbes and divers saprophytes that were only accidentally parasitic, the fungi (*tricophyta*) which caused the several affections designated by the name of "tinea." The animal parasites might be divided into external and internal parasites.

Of the internal parasites some were common to man and animals, or, living more especially in animals, might develop accidentally in man; they were often transmitted indirectly, while others must necessarily penetrate into the human organism in order to complete their evolution, and hence their transmission was always direct (*Tenia solium*, *Tenia saginata*).

Indirect transmission took place very generally through the medium of drink or food, polluted or infected by the deposition of ova or embryos.

Direct transmission was brought about by the consumption of the flesh of infected animals. In this case the parasites living in the larval state in animals attained their complete development in man (*Tenia solium*, *Tenia saginata*, *Bothriocephalus latus*, *Trichina spiralis*.)

Prophylaxis must be regulated by the indications furnished by the preceding data: 1. So far as concerned external parasites, man ought, as far as possible, to avoid contact with animals suffering from parasitic affections transmissible to his species; he ought to endeavor to destroy the parasites and their progeny, not only in those animals themselves, but also in all spots which might have been infected. 2. Since internal parasites were introduced generally through the medium of food or drink, it was expedient only to consume these substances after a careful examination and after having purified them, when necessary, by boiling, filtration, or other means. 3. Certain sanitary measures might contribute effectively to the completion of the protection.

In the Section of Infancy, Childhood, and School Life, DR. FRANCIS A. WARNER read a paper on "The Scientific Observation and Study of Children in Schools." The bearing of the paper was sociological rather than medical.

DR. JACOBI suggested that feeble-minded children should be trained apart from others, so as not to impede the progress of more intelligent children, nor to suffer from undue pressure by competition with the latter.

MR. NOBLE attributed a good deal of physical deformity among the children of the working classes to poor nutrition during childhood, in part resulting from ignorance and carelessness.

DR. OCTAVIUS STURGES read a paper on "The Early Recognition and Probable Arrest of St. Vitus's Dance in School Children." He had notes of forty cases of chorea admitted to the hospital in six months, and he had come to the conclusion that the exciting causes were chiefly examinations, puzzling over sums, and punishments. Children were frequently kept at school after the disease had commenced showing itself by restlessness, and thus entailing unmerited and injudicious punishment. Chorea often manifested itself also by the child becoming ill-tempered, restless, and untidy. The early want of nerve-control was first expressed in the hand, and was shown in bad writing and bad ciphering, which entailed punishment, until the child became really ill. Thus the disease had two distinct phases—the teacher's and the doctor's. The teacher punished unwittingly and ignorantly, and then the doctor stepped in. If he had been called in when the nerve symptoms commenced, proper treatment would have set the child right; but things were allowed to go on until the case became one for hospital treatment. St. Vitus's dance was first detected by observation of the muscles of the face, which twitched; then, if the child became ill-tempered and untidy in his appearance, inquiries should be made of the mother if the child slept well and had sufficient food. He said if there were any muscular infirmity the hand test was infallible. If the child could hold up both hands straight with the fingers open, and there was no falling back of the hands nor quivering of the muscles, he was free from any danger of chorea.

DR. CHEADLE stated that besides nervousness and the wear and tear of learning, excitement was also a cause of chorea. He thought chorea a grave disorder, often complicated with heart disease.

MR. MALCOLM MORRIS read a paper on "Ringworm in Elementary Schools." Both he and DR. T. COLCOTT FOX insisted upon isolation of children having the disease.

DR. SHELLY read a paper on "Epidemics in Schools," for the prevention of which he suggested a system of health certificates, quarantine, and disinfection.

In the Section of Chemistry and Physics in Relation to Hygiene, SIR HENRY ROSCOE delivered the Presidential Address. He dwelt upon the progress of the last

fifty years, upon the water-supplies of to-day as compared with those of the past, upon the disposal of excreta, upon the matter of air-pollution, and upon the chemical products of bacterial action.

DR. THEODORE WILLIAMS stated that fogs were well known to cause a large increase in mortality from certain chest affections and from anemia. Persons suffering from bronchitic asthma were, however, benefited by London fogs, and he had found that certain patients suffering from this disease improved in health rapidly when living in a London fog and when exposed to the air of the Metropolitan Railway.

MR. ERNEST HART said that he was sure that Dr. Williams did not mean to imply that the experience of a few persons subject to a disease so capricious as asthma had any general value for the decision of the question in hand. To create or tolerate London fogs for the sake of a few asthmatics would be to burn down the house for the sake of roasting the pig. The mortality of London during the previous great fogs had been as great as in a cholera season. Private houses were the main sources of smoke in towns such as London, and this affected not only the purity of air, but the amount of light. A few years ago roses would grow in London; they would not do so now. The bleaching of wax was carried on in London twenty or thirty years ago, but this industry could not be carried out there now.

DR. TRIPE emphasized the mortality due to fog and smoke.

DR. E. HAUGHTON advocated the compulsory use of closed grates and the imposition of a tax on open fireplaces.

PROFESSOR F. W. OLIVER referred to the injury to vegetation by town fogs. He exhibited a series of diagrams showing the injuries caused to the various organs of plants by fogs and by very dilute mixtures of sulphurous acid with air, the injuries caused by the latter method being identical with those observed with fogs.

DR. SHERIDAN DELÉPINE and MR. A. B. GOMESS exhibited an interesting and ingenious apparatus designed to show the "possibility of removing the smoke of fires from the air of towns and of using it for disinfecting sewers." By means of a small amount of water falling from a moderate height (a few feet) it was possible to produce a displacement of a large amount of air, and to divert the smoke of a fire from a chimney into a system of pipes running in any direction, and by a very simple combination of channels and chambers the sewage itself might be used for the purpose of displacing the smoke and causing it to mix with the sewage.

DR. SIMON read a paper on the "Organization of Local Boards of Health," which, he maintained, should be distinct from, though subject to, those of local self-government, and under the direction of a physician giving his whole time to the work. In towns with over 300,000 inhabitants there should be several such boards, identical in constitution, but under the direction of one central board and its chief. Each board should be divided into sections dealing respectively with (1) sewerage, water-supply, and public and private buildings; (2) food-supply and adulteration, with, if possible, a bacteriological station; (3) the notification and repression of infectious diseases, and the hygiene of dwellings and schools; and (4) vital and nosological statistics.

In the Section of Preventive Medicine, DR. EDWARD SEATON opened the discussion on "Diphtheria." He stated that while no climate afforded immunity, the tropics suffered less than cold and temperate climates. He expressed the opinion that diphtheria was uninfluenced by general sanitary conditions.

DR. SCHREVENS presented statistics of diphtheria in Belgium which showed that the mortality curve of diphtheria was similar to that of enteric fever, the largest number of deaths occurring from both diseases in the same districts. He believed that both diseases were fecal diseases.

MR. M. A. ADAMS discussed the "Relationship Between the Occurrence of Diphtheria and the Movement of the Subsoil Water." He believed that the organism of diphtheria inhabited organically polluted surface soil and was liable to displacement and to dispersal into the superincumbent air.

DR. GIBERT stated that since thorough disinfection had been carried out in Havre there had been a distinct decline in the mortality.

DR. JULES BERGERON presented statistics showing that for a number of years the progress of diphtheria in France had been uninterrupted.

DR. C. E. PAGET presented figures that pointed to a correspondence between diphtheria on the one hand and the general mortality rates and general sanitary circumstances on the other.

DR. C. N. HEWITT presented facts that seemed to prove that the disease was infectious, that it was communicable by persons and things, that the infection lived and grew outside the body and below its temperature, that it was tenacious of life as against measures of disinfection, and lived for long periods in clothing and bedding and on floors and walls. Isolation and systematic disinfection, with the most perfect sanitary regulation, were most efficient at present in the control of the disease.

In the discussion that followed, Professor D'ESPINE, DR. JANSSENS, and DR. ESCHERICH took part. The tendency of the discussion was to the effect that local disinfecting measures were effectual, or at least of great use in preventing the spread of diphtheria.

DR. THURSFIELD believed that the failure of sanitary improvements to stop the increase of diphtheria was to be attributed to the dissemination of the disease by very mild, medically unattended, and therefore not notified cases, generally acting through school agency. Further, more importance should be attached to the fact that the chief influence favoring the incidence of the disease was personal susceptibility.

DR. TRIPE stated that it was noticeable that good drainage had but little effect in diminishing the virulence and extent of epidemics of diphtheria. The best method of preventing the spread of an epidemic was the destruction by fire of all rags infected by secretions. He believed the affection was spread by contact, and he had found that closing the play-ground was as effectual as closing the school.

In the Section of Bacteriology, DR. ROUX opened the discussion on Immunity. He stated that recent advances in the subject of immunity had in common the attenuation of virus and preventive inoculation. Two methods of attenuation had been described by Pasteur: prolonged

exposure of a culture to air at a suitable temperature, and the passage of the organisms through the bodies of different species of animals. Other methods had also been employed: for example, the action of heat, the use of antiseptics, and of compressed oxygen and light.

In all cases, whatever the method employed, it was found to be necessary that the attenuation should be effected slowly and gradually; rapid attenuation rendered a virus altogether inactive without impressing on it any hereditary weakness. In whatever way the virus was prepared it must, in order to confer immunity, be brought into direct contact with the tissues of the animal. In the early experiments the virus employed was always living; the living microbe, itself attenuated as to its virulence, was used. Another possible method of conferring immunity was the inoculation of the chemical products produced by the microörganisms. Dr. Roux discussed the theory of phagocytosis and the nature of immunity.

DR. HANS BUCHNER stated that there were three conceptions of the causes or determining factors of an already existing immunity: (1) Want of nutritive material in the tissues and tissue juices, whereby the bacteria were destroyed. (2) Phagocytosis, that is, the capture of the generating factors of infection by the ameboid cells of the body, with subsequent destruction of them by chemical action inside the cells. (3) Prophylactic substances in the animal tissue juices.

MR. E. H. HANKIN stated that immunity depended upon the presence of certain bacteria-destroying substances, to which the name "defensive proteids" had been given. From what was known of defensive proteids, it appeared very unlikely that many chemical tests would be found capable of distinguishing them. Consequently they must be classified by their physiological characters. Defensive proteids may be either sozins—present in the normal animal, or phylaxins, present in artificially immune animals. Sozins are again subdivisible into myco-sozins, that destroy the microbes, and toxo-sozins, that destroy the microbic products. Phylaxins are subdivisible into myco-phylaxins, that destroy the microbes, and toxo-phylaxins that destroy the microbic products.

PROFESSOR EMMERICH stated that bactericides were probably intermediate products of decomposition, a stage in the passing of albumin into fat. Hence it was probable that the blood and tissues of immune animals, which contained matter energetically poisonous to bacteria, must, if injected subcutaneously, also act as a remedial agent in infectious maladies.

PROFESSOR ARLOING showed that the power of naturally immune animals to resist microbic poisons was due to a natural tolerance for the poison analogous to that met with in animals that had acquired tolerance after treatment with attenuated vaccines.

PROFESSOR EHRLICH reported some experiments with anti-toxines, and then discussed the question of inheritance. He stated that the descendants of highly immune fathers were not themselves immune, while, on the other hand, the descendants of immune mothers were relatively immune, but in a less degree than the parent.

PROFESSOR HUEPPE stated that the opinions on the part played by the cells and the blood serum were still very diverse. The cells, however, could afford to wait if justice was not being done to them, for they would come to the front again in due time. Experiments on the chemical properties and the trophic properties of cells had triumphantly established the primary cell phenomena that had already been discussed. In those phenomena it was necessary to distinguish between the effects produced by the products and those produced by the cell protoplasm itself.

DR. KITASATO stated that, in conjunction with Dr. Behring, he had shown that an injection of the blood of rabbits which had been made artificially immune from tetanus by means of trichloride of iodine rendered mice not only refractory to tetanus, but also cured the disease when it was already in progress. This proved that blood rendered artificially immune was really efficacious against a malady of so acute a character as tetanus.

MR. ADAMI stated that the bacteriological world was at the present moment divided into two opposed camps—those who held that microbes within the system were destroyed by the agency of the living cells, and those who held that the function of microbic destruction was performed by the blood serum and body fluids in general. He wished especially to emphasize the fact that there was ample evidence that the controversy upon the subject turned after all upon phenomena that differed not so much in kind as in degree. The controversy tended rather to be about words than actuality. An observer who studied the matter with an open mind could not fail to be struck by the prevalence of phagocytosis. It was quite possible to accept both views. The controversy had taken place chiefly as to the phenomena observed in the rat; in that animal phagocytosis was only to be observed with difficulty, and the serum of rat's blood undoubtedly possessed bacteria-killing properties to a high degree.

DR. KLEIN observed that ordinary frogs and rats were insusceptible to anthrax, but these animals had been made susceptible thereto by a variety of means, which seemed to indicate that there were certain chemical conditions at work. If virulent material were introduced into the lymph-sac of a chloroformed frog, the frog always died of anthrax. Several other instances of such effects were given, but there was nothing to see under the microscope that would justify anyone in saying that the blood corpuscles had lost anything of their power of swallowing up bacteria. The experiment showed that certain chemical changes had been established in the blood—it might be entirely independent of the leucocytes—which were sufficient to destroy the substances that were normally present in the blood of the frog or the blood of the rat, which counteracted the action of the anthrax bacteria.

DR. METSCHNIKOFF said that Behring and Kitasato had discovered the bactericidal power of the serum of guinea-pigs inoculated against the vibrio Metschnikovii. They had demonstrated that whereas this vibrio developed readily in the serum of guinea-pigs, which were susceptible to the malady after being in the body from three to five hours, it was destroyed in the body of the inoculated guinea-pig. The serum of the inoculated guinea-pig killed the vibrio in a very short time, whereas in the serum of a susceptible guinea-pig they developed in great numbers. Animals completely inoculated against infection were as susceptible to toxic doses of

sterilized cultures as animals not inoculated at all. The inoculated guinea-pigs died after the same dose as those not inoculated, and the inflammatory and febrile phenomena were the same. In the septicemia of guinea-pigs, of all the immunity factors known, the phagocytes had the most important action. The bactericidal power of the serum, remarkable though it was, did not confer immunity. The insufficiency of the theory founded on the microbicidal power of the body fluids had been admitted by Behring himself, and but few facts could be quoted in its support. Behring had himself acknowledged that this theory as to the bactericidal power of the blood could only be applied in diseases, such as tetanus and diphtheria, which were distinguished by their exceptionally toxic characters, and by the absence of diffusion of microbes. As was proved by Messrs. Vaillart and Vincent in regard to tetanus, the animals that were subject to this malady were already naturally refractory to the microbe. In this immunity from the microbe it was the phagocytes that played the principal part. If this theory were discussed fairly, and if Ehrlich's theory that the crisis in infectious diseases was really due to the rapid formation of the antitoxine, even then the part played by the phagocytes was still very important. Among the diseases in which a crisis occurred, relapsing and malarial fever might be cited. If the crisis were really caused by the destruction of the toxine in the organism, still if the microbe remained alive it could multiply, and cause a relapse more serious than the first attack. The spirilla of relapsing fever were destroyed by the phagocytes during the crisis and during the apyrexial period. In monkeys the spirilla were destroyed by the cell, and the illness terminated with the first attack; but in men the phagocytes were not generally able to completely destroy the spirilla, and a second attack occurred in spite of the formation of the hypothetical antitoxine. The same thing occurred in intermittent fever. In this all-important act of destruction of the microbes the phagocytes performed the most important part.

In the Section of the Relations of the Diseases of Animals to those of Man, DR. E. KLEIN considered "Infectious Udder Diseases of the Cow in Relation to Epidemic Diseases in the Human Subject." He contended that the infectiousness of milk was not due to contagion from a human source, but that probably a pathological condition of the milch-cows played a prominent part in giving to their milk the power of causing scarlet fever in the human subject.

PROFESSOR CROOKSHANK contended that there was no evidence in support of the theory that scarlatina or diphtheria in the human subject ever arose from eruptions or skin diseases of the cow.

DR. OSTERTAG expressed the opinion that scarlet fever was not communicable from man to animals. Dr. Löffler had inoculated animals with blood from the pustules of scarlet fever in man, but had never produced the disease in the cow. With regard to Dr. Klein's experiments, the general opinion in Germany was that Dr. Klein had confounded the disease in question with either cow-pox or foot-and-mouth disease.

PROFESSOR CHAUVEAU stated that, as the result of a very considerable number of experiments, he had found himself able in every case attempted to communicate the smallpox virus to bovine animals, but he had never in any attempt succeeded in transforming this smallpox virus into vaccine.

DR. DESHAYE read a paper on the "Hygiene of the Newborn Child." His conclusions were: 1. That in all cases in which the mother was able to nurse, the infant should derive its nourishment wholly and solely from the mother's breast. 2. Should the mother be unable to nurse her child, the child should be fed with cow's milk, sterilized. 3. The bottle (without a tube) should not be used before the morning after birth at the earliest. 4. The *frenum linguæ* should never be divided, unless it were so short as absolutely to prevent suction.

In the Section of Chemistry and Physics in Relation to Hygiene, DR. THRESH read a paper on the "Chemical Treatment of Sewage." He classified as follows the physical processes for the removal of specific organisms, of suspended impurities, of dissolved organic matters:

1. Subsidence—(*a*) with complete rest; (*b*) during slow, but continuous, flow.

2. Mechanical straining and filtration.

3. Chemical filtration, or percolation through materials exerting some chemical or catalytic action on the organic matters.

4. Precipitation by the addition of one or more chemicals. These may be (*a*) soluble, as the salts of iron and aluminium, or (*b*) insoluble, as clay, magnetic oxide of iron, and the various kinds of charcoal.

5. Electrolysis, or purification by electrical treatment.

6. Oxidation and destruction of the organic matter by addition of chemicals.

7. Sterilization and disinfection for the destruction of microörganisms and the arrest of putrefaction.

8. Nitrification, or the destruction of the organic matters by the action of the nitrifying organisms found in surface soils.

9. Irrigation, or the utilization of the organic matter as food for growing crops.

In exceptional cases only was one of these processes alone found to yield sufficiently satisfactory results, and two or more of them must be used in combination or in succession.

A resolution was passed "That, in the opinion of this meeting, the best yet known method of disposing of the sewage of towns is that of purification and utilization on the land."

In the Section of Naval and Military Hygiene, DR. SPOONER considered the subject of "Dietary Scales in Connection with the Health of Seamen." He criticized the ordinary dietary scales as containing too much salt meat and too little vegetables. On American ships, he said, potatoes were always given. He contended that, if a proper dietary scale were compulsory, scurvy would in a short time be entirely eradicated.

DR. HARRIS exhibited and explained "A Ship Ventilator," an apparatus constructed for the removal of air from cabins and confined spaces by means of an induced current without the admission of water. A long shaft was surmounted by a very large bell-mouth, narrowing rapidly at the base. Air entering and passing down the shaft was reflected upward and caused an induced current. If a sea washed in, the weight would open the valve and allow the water to run out. By the insertion of a valve the inlet might be converted into an outlet.

It was found by experiment that the ventilator was efficient to the extent of 20 per cent. of its theoretical work.

MR. HAMER read a paper on "The Homes of the Poor." The connection between insanitary dwellings, ill-health, and a low state of morals was, he maintained, even more close than that between ignorance and crime, and the pecuniary value of life and health was now so generally recognized that he hoped that these claims would not much longer be treated as secondary to the so-called rights of property.

DR. VON HAMEL ROOS urged the necessity of some international agreement as to what constituted adulteration, an article which was permitted in one country being liable to seizure when exported to another.

DR. DANFORD THOMAS treated of the "Sale of Poisons," whether as such or in the concealed form of proprietary medicines, and gave a sketch of the law on the subject in the chief countries of Europe.

CORRESPONDENCE.

MUNICH.

Prof. Sänger's Hysterectomy; Beer-drinking; Street-paving: Foreign Medical Students; Prof. Winckel and his Work; Operations; Winckel's Perineal Operation.

IN writing of the hysterectomy by Professor Sänger, I omitted two matters of some interest. One was that the operation was done with the patient in the Trendelenburg position, and the second was that the stump of the pedicle, after being thoroughly cauterized, Paquelin's thermocautery being used, was well covered with a mixture of equal parts of salicylic acid and tannin.

As one enters Munich he is impressed with the fact that it is a great center for the making of beer, for even if he does not recognize some of the many breweries, he will see on the side tracks freight cars bearing the names of many—I counted no fewer than eight. The Bavarian Government makes beer, and private individuals and corporations, so that there are probably between thirty and forty breweries in all, some of them immense establishments. I was told that while the export of beer is very great the quantity consumed in the city is by no means small, about one gallon daily for each adult. Of course, all adults do not take such an amount (I have no doubt some do), else there would be none left for children and visitors, and I am not aware that any total abstinence society exists among either, though really why beer, even Bavarian beer, is preferred to good water I do not know. It appears to be almost a part of religion to use beer in Munich! St. Anna has a brewery, St. Peter a beer hall, and I know not how many more saints have their names concerned in the making or the consuming of what may be specially called the Bavarian beverage.

While in Germany I have conversed with several medical men as to the use of beer in the Empire, asking them if the people would not be in better physical condition if they drank water instead of beer, and my question was always answered in the affirmative; there seemed also common agreement on the part of my informants that diseases of liver, heart, and kidneys were not uncommon in consequence of excessive beer-drinking.

Munich has not the excellent streets that Berlin or Leipzig has—boulders on some, some paved with granite blocks, most macadamized, but asphalt or wooden blocks are not found; fortunately it rains about four days out of five, it seems to me, and then the people are protected from dust, which would be very great, in consequence of the material most commonly used for streets. The city is said to be too poor to have better streets, but if a few of the many diamonds belonging to the State were sold, enough would be realized to make its great thoroughfares the envy of Berlin or Paris. The jewels are now utterly useless save for exhibition to visitors, and so carefully guarded that visitors are locked in the room during their inspection, with one or more soldiers present.

But though Munich is not well paved, she has the second largest medical school in the German Empire. Visiting this city now for the third time within three years, it still surprises me that comparatively few doctors and few medical students from our country come to Munich, while so many hundreds go to Vienna and Berlin. Munich's treasures of art—painting and sculpture more especially—draw thousands of visitors, hundreds of them from the United States, while for the sake of its medicine there is only an occasional visitor.

My coming has been solely for the purpose of seeing the work of my kind friend Professor Winckel, a man for whose ability I have the highest admiration, and for whom personally I entertain the highest regard. Dr. W. is the third in a generation of doctors—indeed, not only one but both of his grandfathers were doctors; his father, now more than eighty years of age, a few months ago did his nineteenth case of Cæsarean operation, and it was successful, though performed under most unfavorable circumstances. Professor Winckel is a man of almost encyclopedic knowledge in his department of obstetrics and diseases of women, but he also possesses great general literary culture—for example, in a recent number of a German review there is an article from his pen on "Sea Bathing as a Health-means," which is enriched by several historic and classic references.

It need hardly be told the readers of THE MEDICAL NEWS that for several years he has occupied the chair of Obstetrics and Diseases of Women in the Bavarian University, and that he has under his charge the Frauen-Klinik. Adjacent to the building of the Frauen-Klinik is his handsome residence, erected by the Government. He has had in the Klinik so far this year one thousand cases of labor, and a larger number of cases of diseases of women. Such a hospital at home would present an admirable opportunity for at least thirty or forty obstetricians and gynecologists, each confident of fitness and clamorous for place! It is a deplorable fact that in many of our public institutions professional places have been needlessly and injudiciously multiplied; honors and opportunities are there so diffused, a sort of common rain falling upon the just and the unjust, the fit and the unfit, that their value is depreciated, and the interests of neither medical education nor of patients promoted. During the teaching term Dr. Winckel works for six or eight hours every day, his operations beginning at 7 A.M., and continuing from one to two hours. In clinical instruction in diseases of women most American medical students have one hour a week, but the Bavarians have at least twelve hours each week. The practical instruction

in obstetrics given here is, of course, very thorough and complete, and I know no school in our country equal to it in these regards. The contrast between obstetric and gynecological teaching here and in the United States arises in part from the vastly greater abundance of material here at hand; but if our medical schools had money so as to have hospitals sufficiently large, and conducted not partially or principally, but solely, in the interests of the schools, then there would be a great advance, and the profession would rejoice, though a few place-hunters and time-servers would be ignominiously retired, muttering impotent maledictions. If I have spoken in this, or in other letters, of the defects, more especially in regard of practical instruction in obstetrics and diseases of women, of American medical education, it has been with deep sorrow, and yet with the assured hope that a better day will come, and trusting that some word of mine may have a part, even though very small, toward hastening that coming.

The lecture term is now over, and Dr. Winckel is usually absent upon his vacation travel, but this August he remains at home, because of an important obstetric engagement. In consequence of his usual absence at this time, comparatively few patients for operation are sent to the hospital by physicians. Nevertheless, during three days he has shown me fourteen operations, none without value, and some of them of great interest; two of the latter being abdominal sections, and one vaginal extirpation of the cancerous uterus. It is the rule in all the hospitals I have visited on the Continent, that the laparotomies are done in a room devoted exclusively to this work. Elsewhere, the use of antiseptics is strictly observed. The operator, his assistants, the nurses, and visitors, have white linen, double-breasted overcoats. Winckel and Martin alike operate sitting between the patient's lower limbs, and each uses Martin's table. The first abdominal section was done for osteo-malacia—consisting in a removal of the uterine appendages, or as they call it here, castration. The poor woman had been delivered of a living child six weeks before, by a midwife, who in the delivery performing podalic version, had fractured her thigh. Dr. Winckel has performed this operation on two other osteo-malacic patients, and the result was satisfactory in each case—indeed, one of the women, operated on two years and a half ago, is employed in the hospital, and I had an opportunity of examining her condition. In the castration I saw done the abdominal incision was quite short enough to please Mr. Tait or his followers, and the removal of the appendages quickly done. The pedicles were tied with silkworm-gut. By the way, one learns in Berlin the powers and utilities of catgut, in Leipzig of silk, and here of the *fil de Florence;* thus often doctors differ, each seeking the same end, but not employing the same means.

The second abdominal operation was done for the removal of a cystic ovarian tumor, but presented special difficulty from adhesions, more particularly to the posterior wall of the uterus, and these were divided chiefly by the thermo-cautery. The abdominal wound in the first patient was closed by three sets of sutures: continuous catgut for the peritoneum, then buried silkworm-gut for the muscular layer, and finally the same material for the skin. He is very careful to stitch with catgut the peritoneal margin of the stump together, thus preventing the possibility of subsequent troublesome adhesions.

Among the *Stuhl* operations were Sänger's modification of Emmet's operation for lacerated cervix, amputation of the vaginal cervix, the removal of a dermoid cyst from the right wall of the urethra—certainly a very singular case—colporrhaphies, and, as previously mentioned, vaginal extirpation of the uterus. In the latter, as in similar operations I have seen at Berlin last year and also this, clamps were not used, but ligatures—in Berlin of catgut, here of silkworm-gut chiefly. Martin cuts and ties, cuts and ties, and thus makes continuous extraction of the uterus; but Winckel, after opening the posterior and anterior cul-de-sac, inteverts the uterus, then ligates in parts the broad ligament of one side, divides it, after which that of the other side is similarly treated; he closes very carefully the vaginal vault with silkworm-gut.

The employment of the uterine sound is very common by Winckel, Martin, and others of the great operators whom I have seen in Germany, and the condemnation of this instrument in some quarters arises, it seems to me, from partial experience or from puerile judgment, or from its employment without proper precautions. How weary one becomes of the positive assertion and defiant dogmatism arising from partial knowledge and limited personal experience!

One of the reasons for my great admiration for Dr. Winckel is, that while he does not hesitate at the gravest operations when satisfied they are necessary, he is eminently conservative. For example, a patient with myoma of the uterus, the organ reaching as high as the umbilicus, or above, was sent to the hospital because of obstinate metrorrhagia. On the part of some the case would invite immediate hysterectomy, indeed they might regard it as imperative, while others would think that the uterine appendages ought to be removed. Dr. Winckel was unwilling to do either until he had tried less heroic means; he dilated, using Schröder's dilators, curetted the cervical canal, and applied muriated tincture of iron—looking to castration next, should this fail, and placing hysterectomy last.

Very interesting to me was Dr. Winckel's perineal operation, and with a brief description of this my letter ends. This operation, like Tait's, Simpson's, and Sänger's, is a flap operation; and, like those of the two former, is performed without removing any tissue. The patient is placed in the usual position for such operations, two assistants holding the lower limbs, and the feet wrapped in towels that have been wrung out of a three per cent. carbolic acid solution; the pudendum is well washed with soap and water, at least the lower half shaved, an antiseptic wash, and then a three per cent. carbolic acid solution used with the irrigator to thoroughly cleanse the vagina. The operator then takes a double tenaculum with broad flat handle—Ziegenspeck's, I think it is, and the best instrument of the kind I have seen—and catches the tissues in the median line of the posterior wall of the vagina at a point as high up as the separation of the flaps, and gives it in charge of one of the assistants; a similar instrument in the skin just at the anterior boundary of the perineum; two similar tenacula are now used, one on either side just at the junc-

tion of skin and mucous membrane, where the external lateral separation of flaps is to be — the four tenacula being held by assistants. The operator begins the formation of the flaps by a semicircular incision with a scalpel at the vulvar orifice, within the three points held by the externally-placed tenacula, and it is then continued and completed by a rapid dissection until the level of the internal tenaculum is reached posteriorly. When the vaginal flap is drawn upward by tenaculum or forceps inserted in its border and in the median line, a trapezoid surface is then formed, which might be compared to that of an unfringed shawl opened and held by its our corners, or by imagining two triangles applied to each other base to base. But to make the meaning plainer, let me attempt an illustrative diagram. In Fig.

FIG. 1.

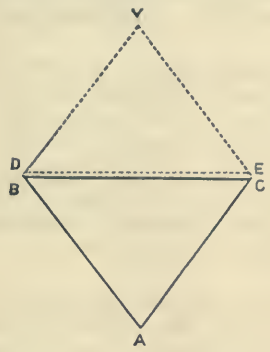
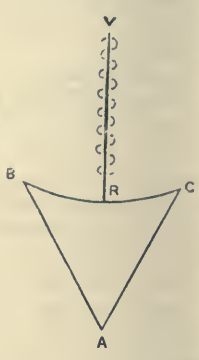


FIG. 2.



1 the vaginal triangle, *VDE*, is represented by dots, the rectal, *ABC*, by lines—*V* is the limit above of the flap, *DE* is its base and marks the end of the separation of the flaps; *A* is the termination at the anus. These triangles are to be closed. This has its first step in stitching together *VD* and *VE*, the catgut suture being used for this purpose, and it is begun at *V*. It should be remembered that this flap has never been separated at the sides of the vagina, and hence the stitching brings together surfaces that have heretofore been attached to the surface *ABC*, and also narrows the vagina, especially as the stitches approach and include the base of the triangle. As the stitches descend toward the base of the dotted triangle, and especially when near completing the stitching, obviously the line *BC* becomes shorter, and the form of the second triangle is changed with the disappearance of the first; possibly, the presentation of an illustration (Fig. 2) may make the matter clearer. *VR* represents the closure or obliteration of the upper triangle, and *ABC* the lower, changed somewhat in form. If *ABC* were a plain surface the operation would be immediately completed by the introduction of four to six perineal sutures; it is not, however, such a surface, but presents quite a sulcus in the median line *RA*, and, therefore, a series of silkworm-gut sutures, four or five, are introduced so as to include the middle third, or rather more, of this surface, and the ends cut off quite short; thus the sulcus is caused to disappear, and the triangular space much narrowed. The operation is ended with the introduction of the external sutures and tying them, after which the two ends of each are knotted together about two inches from the skin and the free portion cut off; the utility of this knot is obvious.

If any reader should find fault with the details into which I have entered, condemning them as too elementary, I will not repeat the words found in an old herbal under a certain plant, *Apage! Non tibi spiro*, but apologize by saying that I write hoping to teach some who have been as ignorant as I was in regard to the method of performing what seems to me an admirable operation for partial rupture of the perineum, with its frequent consequence, prolapse of the posterior vaginal wall.

T. P.

NEWS ITEMS.

As to Railway Fares, etc., of those Attending the Congress at Washington.—The Trunk Lines, the New York and Boston lines, the Southern Passenger Association, and the Central Traffic Association, will transport persons wishing to attend the Congress from points on their lines to Washington and return at the price of one and one-third the regular fare on the following conditions: The going ticket must be purchased within three days before the opening date of the meeting. Each person availing himself of the concession must pay full first-class fare going to the meeting, and must obtain a certificate from the agent of whom the ticket is purchased. Those holding such certificates, when countersigned by the proper officer at the Congress, can obtain return tickets at one-third the highest limited fare.

Certificates are not transferable, and the return tickets secured upon certificates are not transferable. If any of them are sold or transferred they must be redeemed at the highest first-class rate by the person making such sale or transfer. No certificates will be countersigned at the Congress except those presented by physicians attending the Congress, or their wives and members of their families; nor will any certificate be countersigned after September 26th. No refund of fare will be made on account of any person failing to obtain a certificate. Those who wish to avail themselves of this method of obtaining reduction in fares, should present themselves at the office for certificates and tickets at least thirty minutes before departure of trains. It is absolutely necessary for each passenger before starting to obtain a certificate from the ticket agent of whom the going ticket is purchased, otherwise he can obtain no reduction in the return fare. There will be no stop-over privileges on the return tickets, which must always be by the same route as the going ticket. Members may obtain tickets on these conditions for their wives and members of their families, as well as themselves. Tickets for the return journey will be furnished only provided the *properly countersigned certificates* are presented to agent at return starting-point within three days after the adjournment of the Congress, Sunday not to be counted as a day.

The Congress of American Physicians and Surgeons.—The Congress meets in Washington, D. C., September 22d to 25th, inclusive. It is composed of the members of those national medical societies whose names and secretaries are given below, and of foreign guests specially invited by the Executive Committee. To enable a physician residing in the United States to become a member of the Congress, with the right to participate in its pro-

ceedings, it is necessary that he be a member of one of these constituent national societies. A physician may be accredited as a visitor to the Congress by any one of the constituent societies. The certificate of the Secretary of one of these societies to the effect that he is thus accredited, will enable him to register upon payment of the registration fee, which registration will entitle him to a card of admission to the President's reception and to a copy of the *Transactions* of the Congress, but not to take part in the deliberations of the Congress.

The following are the names of the constituent societies in the order of date of their organization, and the names and addresses of their respective secretaries, to whom inquiries as to mode of obtaining membership should be addressed:

American Ophthalmological Society; Secretary, S. B. St. John, M.D., Hartford, Conn. American Otological Society; Secretary, J. J. B. Vermyne, M.D., New Bedford, Mass. American Neurological Association; Secretary, Graeme M. Hammond, M.D., 58 W. 46th St., New York City. American Gynecological Society; Secretary, H. C. Coe, M.D., 27 E. 64th St., New York City. American Dermatological Association; Secretary, Geo. Thomas Jackson, M.D., 14 E. 31st St., New York City. American Laryngological Association; Secretary, Charles H. Knight, M.D., 20 W. 31st St., New York City. American Surgical Association; Secretary, J. R. Weist, M.D., 118 N. 8th St., Richmond, Ind. American Climatological Society; Secretary, J. B. Walker, M.D., 1617 Green St., Philadelphia, Pa. Association of American Physicians; Secretary, Henry Hun, M.D., 33 Elk St., Albany, N. Y. American Association of Andrology and Syphilology; Secretary, J. A. Fordyce, M.D., 66 Park Avenue, New York City. American Orthopedic Association; Secretary, John Ridlon, M.D., 337 W. 57th St., New York City. American Physiological Society; Secretary, H. Newell Martin, M.D., Baltimore, Md. Association of American Anatomists; Secretary, D. S. Lamb, M.D., 800 10th St., Washington, D. C. American Pediatric Society; Secretary, W. D. Booker, M.D., 851 Park Avenue, Baltimore, Md.

All physicians are invited to attend the meetings of the Congress and the public meetings of the societies, but only those may register who are members, specially-invited guests, or visitors accredited through the secretaries of constituent societies. The registration office will be in parlors 1 and 2 of the Arlington Hotel. From this office the mail of members and invited guests will be distributed, and here the city address of each member, guest, and accredited visitor can be ascertained. All members, invited guests, and accredited visitors should register as soon as possible. A registration fee of five dollars will be required of all members and accredited visitors. Invited foreign guests will register, but will pay no registration fee. A copy of the published *Transactions* of the Congress will be sent to all members, and to each invited guest and accredited visitor who is registered. Only those who register, and the ladies accompanying them, will be admitted to the reception of the President of the Congress. It is recommended that members effect registration in advance of the meeting by filling out the blank certificates of registration which will be sent to each member about September 10th, and forwarding these certificates, with the requisite fee, to Dr. John S. Billings, Treasurer of the Congress.

The sessions of the Congress will be held from 3 to 6 P.M., daily, in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue. The sessions of the societies will be held according to the programs of each, as follows:

American Ophthalmological Society, Ladies' Parlor, No. 2, Arlington Hotel.

American Otological Society, Ladies Parlor, No. 1, Arlington Hotel.

American Neurological Association, Parlors 182 and 183, Arlington Hotel.

American Gynecological Society, Lecture Hall, Columbian University, cor. 15th and H Streets, N. W.

American Dermatological Association, Parlor, The Shoreham.

American Laryngological Association, Parlor A, Arlington Hotel.

American Surgical Association, Main Hall, Grand Army Building, 1412 and 1414 Pennsylvania Ave.

American Climatological Association, Hall No. 2, Grand Army Building, 1412 and 1414 Pennsylvania Avenue.

Association of American Physicians, Hall No. 1, Grand Army Building, 1412 and 1414 Pennsylvania Avenue.

American Association of Andrology and Syphilology, The Shoreham.

American Orthopedic Association, New Reception Room, Arlington Hotel.

American Physiological Society, Parlor 181, Arlington Hotel.

Association of American Anatomists, Hall No. 3, Grand Army Building, 1412 and 1414 Pennsylvania Ave.

American Pediatric Society, Parlor 206, Arlington Hotel.

The President of the Congress, Dr. S. Weir Mitchell, of Philadelphia, will deliver an address Wednesday evening, September 23d, at 8 P.M., "On the History of Instrumental Precision in Medicine." Members of the American Surgical Association and of the Association of American Physicians will conjointly entertain their foreign guests at a dinner at the Arlington Hotel, Thursday, September 24th, at 8 P.M. The American Gynecological Society will give a dinner at the Arlington Hotel, Thursday evening, September 24th. The American Orthopedic Association will give a dinner at the Hotel Arno, Thursday evening, September 24th. The American Laryngological Association will give a dinner at the Hotel Arno, Thursday, September 24th, at 7 P.M. The American Pediatric Society will give a dinner at the Arlington Hotel, Thursday evening, September 24th. The American Dermatological Association and the American Association of Andrology and Syphilology will, conjointly, give a dinner Tuesday evening, September 22d. The American Neurological Association will give a dinner at the Hotel Arno, Thursday evening, September 24th. The American Climatological Association will give a dinner, the time and place to be announced hereafter.

A number of distinguished physicians and surgeons from abroad have accepted the invitation to attend, among whom may be named Mr. B. E. Brodhurst, Mr. Thomas Bryant, Mr. A. E. Durham, Mr. Reginald Harrison, Sir William MacCormac, Mr. Howard Marsh, Dr. William M. Ord, Mr. Frederick Treves, and Mr. U. Pritchard, of London; Mr. Robert Jones, of Liverpool; Dr. W. T. Gairdner, of Glasgow; Mr. E. H. Bennett and Professor J. J. Cunningham, of Dublin; Professor

John Chiene and Dr. J. Battey Tuke, of Edinburgh; Mr. G. A. Wight, of Manchester; Dr. F. Beely and Professor H. Krause, of Berlin; Professor Curschmann, of Leipzig; Professor Hoffa, of Wuerzburg; M. Emil Javal, Dr. Loewenberg, Dr. Pozzi, and M. Paul Redard, of Paris; Dr. Von Mozengeil, of Bonn; and Dr. Rafael Lavista, of Mexico.

As other societies will meet in this city during the Congress week, it will be prudent for members and visitors to secure hotel accommodations in advance. The Arlington Hotel offers accommodations at the rate of four dollars per day, and the Hotel Arno at three and four dollars a day on the American plan, or one dollar a day per room only, on the European plan. The Committee will take pleasure in answering any inquiry relating to the local arrangements of the Congress.

Officers of the Congress.

President: S. Weir Mitchell, M.D.
Vice-Presidents, ex-officio: Presidents of Constituent Societies.
Chairman of Executive Committee: William Pepper, M.D., Philadelphia, Pa.
Treasurer: John S. Billings, M.D., Washington, D. C.
Secretary: William H. Carmalt, M.D., New Haven, Conn.

Committee of Arrangements.

Dr. Samuel C. Busey, *Chairman*, 1545 I Street, N.W., Washington, D. C.
Dr. John S. Billings, Army Medical Museum, Washington, D. C.
Dr. W. W. Johnston, 1603 K Street, Washington, D. C.
Dr. R. T. Edes, 1214 18th Street, Washington, D. C.
Dr. S. O. Richey, 732 17th Street, Washington, D. C.
Dr. J. Taber Johnson, 1728 K Street, Washington, D. C.
Dr. Samuel S. Adams, 1632 K Street, Washington, D. C.
Dr. I. E. Atkinson, 605 Cathedral Street, Baltimore, Md.
Dr. C. F. Bevan, 807 Cathedral Street, Baltimore, Md.
Dr. Samuel Johnson, 204 Monument Street, Baltimore, Md.
Dr. Samuel Theobald, 304 Monument Street, Baltimore, Md.
Dr. H. Newell Martin, Johns Hopkins Hospital, Baltimore, Md.
Dr. De Forest Willard, 1818 Chestnut Street, Phila., Pa.
Dr. D. S. Lamb, 800 10th Street, Washington, D. C.

The American Electro-therapeutic Association will hold its first annual meeting in the hall of the College of Physicians in this city, September 24, 25, and 26, 1891. The following program has been arranged:

First day, September 24th. President's Address, by Dr. G. Betton Massey, of Philadelphia.

Electro-therapeutics in America; an Historical Survey, by Dr. A. D. Rockwell, of New York.

The Action and Application of the Faradic Current in Gynecology, by Dr. Augustin H. Goelet, of New York.

Alternative Currents, by Dr. Horatio R. Bigelow, of Philadelphia.

The Treatment of Corneal Opacities by Galvanism, by Dr. L. A. W. Alleman, of Brooklyn, N. Y.

Second day, September 25th. Report of Seventy-five Cases of Uterine Myomata Treated by Electricity, by Dr. J. H. Kellogg, of Battle Creek, Mich.

Two Cases of Fibroids where Electricity Ceased to Control Hemorrhage after a Time, Although Eminently Satisfactory at First, by Dr. H. E. Hayd, of Buffalo, N. Y.

The Treatment of Fibroids by Electricity, by Dr. W. H. Hutchinson, of Providence, R. I.

Electro-puncture in Uterine Fibroids, by Dr. G. Betton Massey, of Philadelphia.

Electricity in Chronic Parametritis, by Dr. von Raitz, of New York.

Report of a Case, by Dr. A. H. Buckmaster, of Brooklyn.

Some New Applications of Electro-therapeutics, by Dr. Frederick Peterson, of New York.

The Analgesic Effects of Galvanism, by Dr. Landon Carter Gray, of New York.

Electricity in Diseases of the Stomach, with Exhibition of Patient, by Dr. Lawrence Wolff, of Philadelphia.

Electricity in Carcinoma, by Dr. Robert Newman, of New York.

(Title not received) by Dr. W. J. Morton, of New York.

(Title not received) by Dr. Henry McClure, of Cromer, England.

Some Points in the Technique of Electrolytic Epilation, by Dr. Plym S. Hayes, of Chicago, Ill.

Third day, September 26th. A Rare Case of Twin Extra-uterine and Intra-uterine Pregnancy Treated by Electricity, by Dr. G. H. Whitcomb, of Greenwich, N. Y.

Electricity in the Treatment of Rheumatism, by Dr. W. F. Robinson, of Albany, N. Y.

The Treatment of Subacute Articular Rheumatism by Electricity, by Dr. M. A. Cleaves, of New York.

Electricity in Ankylosis, by Dr. von Raitz, of New York.

Has Electricity any Action as a Germicide, or in Producing Poisonous Results in Food, by Dr. W. R. D. Blackwood, of Philadelphia.

Exhibition of a Rectal Electrode, with Remarks on its Application, by Dr. Guy Hinsdale, of Philadelphia.

Abdominal Electro-puncture in an Ovarian Tumor, by Dr. G. Betton Massey, of Philadelphia.

Eight Months' Work in the Dispensary for the Treatment of the Diseases of Women by Electricity, by Dr. H. R. Bigelow, of Philadelphia.

The American Climatological Association.—The eighth annual meeting of the American Climatological Association will be held on September 22d, 23d, 24th, and 25th, conjointly with the second Congress of American Physicians and Surgeons, in Hall No. 2, Grand Army Building, 1412 Pennsylvania Avenue, Washington, D. C.

The program is as follows:

TUESDAY, SEPTEMBER 22D, 10 A.M.

The President's Address, by Dr. Frederick I. Knight, Boston.

The Medical Treatment of Pleuritic Effusions, by Dr. George M. Garland, of Boston.

The Surgical Treatment of Acute and Chronic Empyema, by Dr. Maurice H. Richardson, of Boston.

The Drainage of Pulmonary Cavities, by Dr. Charles Denison, of Denver.

Notes on General *vs.* Local Treatment of Catarrhal Inflammations of the Upper Air-tract, by Dr. Beverley Robinson, of New York.

Gymnastic Exercise as a Prophylactic and Remedy in Chest Diseases, by Dr. E. O. Otis, of Boston.

The Effect of Change of Posture on Heart Murmurs, by Dr. Vincent Y. Bowditch, of Boston.

Nervo-vascular Disturbances in the Unacclimated in Colorado, by Dr. J. T. Eskridge, of Denver.

Whooping-cough and Its Management; Difficulties of Climatic Treatment, by Dr. John H. Musser, of Philadelphia.

Session of the Congress, 3 P.M.

Conditions Underlying the Infection of Wounds. *Referee*, Dr. William H. Welch, of Baltimore; *Co-referee*, Dr. Roswell Park, of Buffalo.

WEDNESDAY, SEPTEMBER 23D, 10 A.M.

A Study of the Sputum in Pulmonary Consumption, by Dr. E. L. Shurly, of Detroit.

Further Considerations of the Analysis of Recorded Cases of Phthisis Pulmonalis, by Dr. S. A. Fisk, of Denver.

The Histological Changes which Take Place in the Lungs in Cured Phthisis and the Influence of Diatheses in the Development of Such Changes, by Dr. Alfred L. Loomis, of New York.

Lymphatism, by Dr. F. H. Bosworth, of New York.

The Use of Creasote in Pulmonary Disease, by Dr. W. C. Glasgow, of St. Louis.

The Limitations of Bacteriological Therapeutics, with Especial Reference to Tuberculosis of the Lungs, by Dr. E. P. Hurd, of Newburyport.

Attempts to Discover Specifics for Phthisis, by Dr. H. F. Williams, of Brooklyn.

The Value of Koch's Remedy Employed as an Alterative: Reactive Fever Prevented, by Dr. Frank Fremont Smith, of St. Augustine.

Treatment of Sixty Cases with Tuberculin, at Davos, by Dr. Carl Kuedi, of Denver.

THURSDAY, SEPTEMBER 24TH, 10 A.M.

The Epidemiology of *La Grippe*, by Drs. E. W. Watson and R. G. Curtin, of Philadelphia.

Reports on the Late Epidemic of *La Grippe*, by Dr. John C. Munro, of Boston; Dr. A. Alexander Smith, of New York; Drs. R. G. Curtin and E. W. Watson, of Philadelphia; Dr. R. J. Nunn, of Savannah; Dr. E. Fletcher Ingals, of Chicago; Dr. Henry B. Baker, of Lansing; Dr. J. C. Mulhall, of St. Louis; and Dr. Charles Denison, of Denver.

FRIDAY, SEPTEMBER 25TH, 10 A.M.

An Experience with Diphtheria at a High Altitude, by Dr. W. A. Jayne, of Georgetown, Col.

The Waters of Richfield Springs, by Dr. C. C. Ransom, of Richfield Springs.

The Simultaneous Occurrence of Three Cases of Lepra in One Family: a Contribution to the History of Leprosy on the Eastern Coast of the United States, by Dr. W. H. Geddings, of Aiken, S. C.

The Pre-tubercular Condition, by Dr. J. H. Tyndale, of New York.

Early Diagnosis and Treatment of Phthisis, by Dr. R. C. M. Page, of New York.

The Etiological and Therapeutic Relations of the Different Forms of Tubercular Disease to the Climate of High Altitudes, by Dr. H. B. Moore, of Colorado Springs.

The Effect of Climate in the Treatment of Chronic Diarrhea, by Dr. W. W. Johnston, of Washington.

The Climate of the Hawaiian Islands, by Dr. Titus Munson Coan, of New York.

Notes on Laryngical Phthisis in Colorado, by Dr. H. M. Wilson, Jr., of Denver.

American Association of Andrology and Syphilology.—The fifth annual meeting of the American Association of Andrology and Syphilology will be held at the Shoreham Hotel, Washington, D. C., September 22, 23, 24 and 25, 1891.

The program of the meetings is as follows:

First day, September 22d. A Review of the Evidence of the Transmission of Syphilis to the Third Generation, by Dr. Abner Post, of Boston.

Relation of Syphilis to Stricture of the Rectum, by Dr. Robert W. Taylor, of New York.

Observations upon the Syphilitic Cachexia, by Dr. J. Blake White, of New York.

Abortive Treatment of Syphilis, by Dr. J. William White, of Philadelphia.

On the Occurrence of Nephritis in Syphilis, by Dr. John A. Fordyce, of New York.

Exhibition of New Instruments, by Dr. W. K. Otis, of New York.

Second day, September 23d. Some Experience with Supra-pubic and Perineal Drainage, Temporary and Permanent, in Vesical Disease, by Dr. Edward L. Keyes, of New York.

A Contribution to the Surgical Treatment of Ruptures of the Bladder, by Dr. Arthur T. Cabot, of Boston.

On the Use of Salicylic Acid in the Treatment of Certain Forms of Cystitis, by Dr. John P. Bryson, of St. Louis.

Undetected Stone, by Dr. William H. Hingston, of Montreal.

Spontaneous Fracture of Stone in the Bladder, by Dr. Francis S. Watson, of Boston.

Note upon a Possible Service to be Expected from Diuretin in Genito-urinary Surgery, by Dr. Edward L. Keyes, of New York.

Encysted Stone, Complicated with Growths of the Bladder, by Dr. C. H. Mastin, of Mobile.

Treatment of Vesical Calculus in Male Children, by Dr. J. William White, of Philadelphia.

Third day, September 24th. Further Report of a Case of Tubercular Cystitis, by Dr. L. Bolton Bangs, of New York.

Hematuria, by Dr. W. K. Otis, of New York.

Clinical Notes on (*a*) Hypertrophy of the Prostatic Sphincter; (*b*) Relation of Rectal Distention to Arterial Depression, by Dr. William T. Belfield, of Chicago.

Notes on the Surgery of the Prostate, by Dr. William N. Wishard, of Indianapolis.

Stricture of the Ureters, by Dr. Francis S. Watson, of Boston.

Observations upon the Surgery of the Ureter, by Dr. Arthur T. Cabot, of Boston.

Exhibition of Complete Double Ureters of Both Kidneys, by Dr. Edmund E. King, of Toronto.

Fourth day, September 25th. On the Radical Cure of

Urethral Stricture by Restoration of the Mucous Membrane to a Healthy Condition, by Dr. John P. Bryson, of St. Louis.

An Obscure Case of Chronic Non-specific Urethritis of Sixteen Years' Standing, by Dr. George E. Brewer, of New York.

The Treatment of Urethral Stricture and its Resulting Conditions by Excessive Local Distention and Without Cutting; Including a Brief Report of Fifty Cases, by Dr. James P. Tuttle, of New York.

New Methods for the Treatment of Urethral Disease Effected by the Use of the Speculum, by Dr. F. Tilden Brown, of New York.

Treatment of Gonorrhea, by Dr. W. Frank Glenn, of Nashville.

The Dry Poultice in the Treatment of Epididymitis, by Dr. George E. Brewer, of New York.

Exhibition of an Antiseptic Syringe for Hypodermatic Medication, by Dr. J. Blake White, of New York.

State Board of Medical Examiners of New Jersey.—The officers of the State Board of Medical Examiners of New Jersey for the ensuing year, selected at the first annual meeting held in Trenton, September 1, 1891, are: Dr. William L. Newell, of Millville, President; Dr. William Perry Watson, of Jersey City, Secretary; Dr. A. H. Worthington, of Trenton, Treasurer.

The Wuhu (China) Hospital, through the Physician-in-charge, George A. Stuart, has published its first report, covering a period of fifteen months. Work was begun in 1887, without buildings and without supplies. In 1889 a hospital was built. Twenty-six hundred and seventy new out-patients were seen, who made 8020 visits. There were 436 in-patients. Seventeen visits were also made to patients at their homes. A course of instruction in medicine was attended by three of the natives, and was in part successful.

The Apothecary is the name of a new quarterly journal, published by the Illinois College of Pharmacy, to be "devoted to pharmacy, chemistry, botany, materia medica, metrology, and to pharmaceutical education and progress." The first number is dated August, 1891, and contains original articles, editorials, and miscellaneous matters pertaining to pharmacy and cognate subjects. The appearance and arrangement of the journal is most creditable, its avowed objects commendable.

Inter-Continental American Medical Congress.—At a special meeting of the Susquehanna County (Pa.) Medical Society, held August 4, 1891, Dr. W. L. Richardson, of Montrose, Pa., member of the Auxiliary Committee of the Congress for Susquehanna County, introduced resolutions approving of the Congress, and pledging his society to do all in its power to promote interest in the meeting. The resolutions were unanimously adopted.

The Climatologist is the name of a new monthly journal of medicine, devoted to the relation of climate, mineral springs, diet, preventive medicine, race, occupation, life insurance and sanitary science to disease, to be edited by Dr. John M. Keating, Dr. Frederick A. Packard, and Dr. Charles F. Gardiner, and a list of thirty-one associate editors. The object of the *Climatologist*, as stated in its introductory, will be to promote original investigation and to record observations and experience on matters pertaining to the subjects indicated.

Professor Kocher, of Berne, on the 18th of July, celebrated the twenty-fifth anniversary of his appointment as docent.

Ricord.—The Municipal Council of Paris has appropriated 500 francs ($100) as a subscription to the memorial of Ricord.

Mount Carmel Hospital.—The corner-stone of an addition to the Mount Carmel Hospital, at Columbus, Ohio, was recently laid, with appropriate ceremonies. When completed, the building will have a frontage of 201 feet and a depth of 80 feet. There will be 70 rooms, three large wards, and an amphitheater on the fourth floor, with a seating capacity of 300. The interior arrangements are perfect and furnished with every facility for carrying on the work of the institution.

Angina Pectoris—Vincent Prize.—The Société Médicale des Hôpitaux offers the Auguste Vincent prize of 1000 francs ($200) for the best essay upon Angina Pectoris as Symptomatic of an Organic Affection of the Heart and of Arterio-sclerosis. Essays, in competition, should be in the hands of the secretary before the first of November, 1891.

The Tri-State Medical Association will hold its third annual meeting at Chattanooga, Tenn., October 27, 1891, and continue in session three days. The meeting promises to be one of the most largely attended medical meetings ever held in the Southern States. Representative physicians from all sections of the country will be present.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 1 TO SEPTEMBER 7, 1891.

CRAMPTON, L. W., *Captain and Assistant Surgeon.*—Granted leave of absence for fifteen days.

HORTON, SAMUEL M., *Major and Surgeon.*—Relieved from further duty at Fort Adams, R. I., and will proceed to San Diego, Cal., and report to the commanding officer for duty at that post.

MIDDLETON, J. V. D., *Surgeon.*—Granted leave of absence for fifteen days.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 5, 1891.

WELLS, HOWARD, *Surgeon.*—Ordered to temporary duty in the Bureau of Medicine and Surgery.

DICKSON, S. H., *Surgeon.*—Detached from the Practice-ship "Constellation," and wait orders.

CURTIS, L. W., *Passed Assistant Surgeon.*—Detached from the "Constellation," and ordered to the Naval Academy.

RUSH, W. H., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Yantic."

BEYER, H. G., *Passed Assistant Surgeon.*—Detached from the "Yantic," and granted two months' leave.

BOYD, ROBERT, *Assistant Surgeon.*—Detached from the U. S. S. "Dale," and ordered to the Marine Rendezvous, Boston.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ON THE DIAGNOSTIC VALUE OF LAVERAN'S ORGANISMS.[1]

BY H. TOULMIN, M.D.,

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WHILE there have been many papers written upon the nature of the organisms first described by Laveran, but few treat of their clinical importance. Osler,[2] Carter,[3] and one or two others, have, however, considered this part of the subject.

A year ago I reported an interesting case of malarial fever bearing on this point, but since that time so many cases have come under observation in which the examination of the blood was of the greatest importance in the diagnosis, that I wish to again bring the subject forward. It will be well to study a few of these cases before going further:

CASE I.—L. B., colored, twenty-five years of age, was admitted to the hospital December 11, 1889, complaining of cough, soreness in the chest, pain in the abdomen, and fever. He had been quite well up to the last week in November, when one day he felt chilly, but had no definite chill; later he became feverish, felt "good for nothing" and tired, and thought he had "taken a heavy cold." His fever continued, and, like the cough, was worse at night. On the 9th of December there was slight epistaxis. He had no chills and no diarrhea, but some abdominal pain, headache and loss of appetite. He was first seen in the dispensary, where it was noted that "his appearance is that of a man with typhoid." The tongue was swollen, dry, and furred; the skin dry and hot; abdomen slightly tender; spleen moderately enlarged; temperature 101.8° F. The blood contained innumerable intra-cellular and extra-cellular bodies and crescents; and when quinine was administered convalescence was immediate.

CASE II.—G. B., a German, eighteen years of age, admitted January 9, 1890; had been ill fourteen days, with continued fever, headache, loss of appetite, but no chills. Examination on admission revealed a condition similar to that in the preceding case: furred tongue, tender abdomen, enlarged spleen, and a temperature of 102° F. It being the fifteenth day of the disease, the absence of spots was not indicative one way or the other. The organisms were found to be abundant.

CASE III.—W. H., an Englishman, twenty-nine years of age, applied at the dispensary September 2, 1890. He seemed in great pain, was apparently very ill, and unable to give an account of himself, save that he had not been well for some days. His tongue was coated and tended to dryness. The pulse was 108 and small, the temperature 104.2° F. There was tenderness in the right iliac fossa, the spleen was much enlarged, and there were râles at both bases. He vomited freely while waiting to be taken to the ward.

His whole appearance was so typical of typhoid that, at the same time a blood-slide was taken, a short while after admission, the order was given to prepare the patient for bathing. To the great surprise of the physician, however, the blood was found to contain a considerable number of crescents. In the meantime the man's head had been closely shaven, preparatory to bathing. During his stay in the hospital his case served to impress everyone most forcibly with the necessity and value of the means of diagnosis adopted. The day after admission he was able to give a history of his illness—which was one of chills and fever of some weeks' duration. Under quinine he made a rapid recovery.

In each of these three cases, from the history and the condition of the patient when first seen, it would have been impossible to make a differential diagnosis between malarial and typhoid fever. Of course, in time, the intermittent character of the fever, which was present in each case, coupled with the therapeutic test of quinine and the absence of Ehrlich's reaction, would have been quite sufficient.

It must be remembered that the intermissions of the fever may only be demonstrated by frequent temperature observations, as was exemplified in Case I. Hence the necessity of such observations.

Even this means of diagnosis may be absent, as is shown in the next case.

CASE IV.—E. P., a colored boy, nineteen years of age, was admitted August 9, 1889. He gave a history of illness of nine days' duration, with headache, backache and pain in the stomach—symptoms of which he complained at the time of admission. On being further questioned he said that he had had *no* chills; his stools had been watery; he had had constant fever and headache; had vomited on two occasions, and had had nose-bleeding on one day. He was dull; the skin was hot and dry; and the tongue furred. There was gurgling in the right iliac fossa. The spleen extended from the seventh rib to the costal margin. The temperature was

[1] Read before the Clinical Society of Baltimore, November 21, 1890.

[2] Transactions of the Path. Soc. of Phila., vol. xii.; British Med. Journal, March 12, 1887: The Johns Hopkins Hospital Bulletin, vol. i., No. 1.

[3] Referred to by Osler, loc. cit.

103.8°, and, though it was taken every four hours, did not reach the normal for four days. There were no chills while in the hospital, nor was there any sweating.

The blood was found to contain a very large number of crescents, extra-cellular bodies and free blood-pigment.

The case is a striking one. All the symptoms and signs were most suggestive of typhoid. In making a differential diagnosis, the therapeutic test and the absence of Ehrlich's reaction would have had to be solely relied upon—the one demanding time, the other far more trouble, apparatus and time than the examination of the blood. Quinine was purposely withheld for several days, as is the custom, in order to observe the course of the disease and to study the organisms. When given, the convalescence was immediate.

CASE V.—C. M., fifty-two years of age, was admitted October 27, 1889, on account of a severe attack of acute colitis. The temperature, which on admission had been 100° F., reached the normal line on the seventh day, though in other respects his condition was unimproved. On the following day there was a sudden rise of temperature to 103.5° F., preceded by chilly feelings. No history of malarial infection could be obtained, but numerous intra-cellular and extra-cellular bodies were found in the blood.

CASE VI.—G. C., fourteen years of age, was admitted November 16, 1889, for epilepsy, with the idea of possible operation. He had had malarial fever during the summer, but for three months had been quite free from chills. His temperature was normal for a week. On the eighth day he complained of feeling chilly, and had a temperature of 101.6° F. Crescents and flagellate bodies were plentifully found in the blood.

These two cases illustrate how easily we may account for sudden rises of temperature during the course of certain diseases. In both instances, but more particularly in the first, it was of the greatest satisfaction to know the cause of the new trouble.[1]

In the surgical wards, also, blood-examinations are always made when there is an unexpected rise of temperature. If the plasmodia are absent, the cause of the fever is looked for elsewhere; if present, as they have been in a number of cases, the anxiety and trouble, which would have resulted had no examination been made, are done away with.

Too often, unfortunately, the chills and fever of a beginning phthisis are, by careless physicians, ascribed to malarial fever. On the other hand, when we may fear that the symptoms are those of phthisis, the presence of the organisms will always set aside these fears—as in the following two cases.

CASE VII.—J. R., seventy years of age, a fisherman, when admitted gave a history of having had a severe cough with expectoration, and occasional chills and fever. He had lost much flesh, and his appearance was that of a man suffering from some chronic wasting disease. There was no enlargement of the spleen to be detected. The temperature was subnormal at many observations. The examination of the lungs gave a negative result, however, and the sputum was free from tubercle bacilli and elastic tissue, but in the blood were many intra-cellular and extra-cellular and segmenting forms.

CASE VIII. is that of a young man now in the wards, who gave a history somewhat similar to the above. He had had no chills for some time prior to his admission, but the cough and expectoration had persisted. His appearance was very suggestive of consumption, and local signs were found in the right lung. As in Case VII. the examination of the sputum for bacilli and elastic tissue was negative, while that of the blood showed the organisms to be numerous. Before these examinations were made the case was considered as in all probability one of phthisis.

To be sure, cases are not frequent in which, from close questioning and careful examination, we are unable to make a differential diagnosis between these two diseases. But it is in the infrequent and atypical cases that we need every means to aid us, and as the examination of the blood is easier and more practicable than that of the sputum, it must at times be of much value.

The following three cases are given to show that repeated examinations of the blood may be necessary and should always be made when any doubt exists.

CASE IX.—J. P., twenty-nine years of age, came to the dispensary complaining of headache, loose bowels, cough, and "chills and fever." His tongue was heavily coated; temperature 104° F.; and, as Dr. Osler noted at the time, "the man had the appearance of a typhoid-fever patient." His blood was examined before he went to the ward, and one intra-cellular body was found. During the following two days the examinations were negative on five successive occasions. As there were no chills or sweats, but only an irregular, continued fever, and the patient was dull and stupid, with tongue heavily furred, we were almost doubting the accuracy of the first examination. On the third day, however, crescents were found; and under the use of quinine he was well in a few days.

CASE X.—C. S., twenty-three years of age, was admitted October 10, 1889. On October 1st she had had a chill, followed by fever. The chill was not repeated, but there were constant fever, headache, malaise, loss of appetite, loose bowels, vomiting, cough, and on one occasion epistaxis. She looked very ill, the skin was hot and dry, the tongue

[1] The quinine administered seemed to exert a decided influence over the primary affection. The convulsions, which had been frequent, were not repeated while the boy was under observation, and the colitis began to improve immediately. This may have been a coincidence.

furred and tending to dryness, the spleen enlarged, the temperature 99.2° F. The blood was repeatedly examined with negative results. The temperature continued high, but was not characteristic of typhoid. Quinine was, of course, not given. Finally, after numerous examinations, extending over a period of many days, crescents were found. Quinine was then prescribed, and the girl immediately and rapidly convalesced.

CASE XI.[1]—L. K., eighty-one years of age, was admitted July 25, 1889, complaining of headache, pain in the back, cold feet and hands. Two weeks before, he had had a mild "sunstroke," which, however, did not cause him to stop work. "There were signs of bronchitis at the bases of the lungs, and in the right interscapular region the note was higher pitched and the breathing tubular." The spleen was not enlarged. After a chill, lasting a few minutes, the temperature rose to 105° F., and for the next three days varied between 101° and 103°. During the morning of the 28th it was subnormal, the pulse irregular and the patient very weak. The case was considered to be one of senile, low pneumonia, as one examination of the blood, on the 25th, had been negative. He grew steadily worse, and died August 2d. But at the post-mortem examination a slight lesion was found at the right base, while flagellate organisms were numerous in the blood.

It is, necessarily, a very difficult matter to say what the outcome would have been had more careful examinations of the blood been made, but no other means would have sufficed to have made more out of the case than was made.

The fact that there are cases in which the organisms, though present, cannot at once be found would seem to detract from the value of this aid in diagnosis. But I have been able to collect only these three cases from many hundreds—and they all occurred when the method and value of the examinations were just beginning to be understood—so that it is more an apparent than a real defect.

Nothwithstanding the fact that such cases may exist, we cannot fail to recognize the importance and value of negative examinations. More particularly is this true when we are differentiating between malarial fever and typhoid. The few examples that have been given are sufficient proof that at times we cannot, by means of symptoms or signs, distinguish between the two. The very general use of the term "typho-malaria" in this part of the country supports this view. Recognizing this to be true, and remembering how much more serious it is to mistake typhoid for malarial fever than *vice versa*, the true value of such negative examinations becomes apparent. I shall not give more detailed cases as illustrations, those already given, especially I., II., III., IV., and IX., need only be referred to. During the last fourteen months the result of the examinations of the blood has, in every case, been the main factor in making the differential diagnosis—without a mistake having been recorded.

Since the introduction, in July last, of the systematic cold-bath treatment in all cases of typhoid, the need of such a sure diagnostic point has been particularly great, and hence its value has increased. In places where typhoid and malarial fevers are both common, it will prove of especial value.

Quite recently there has been an epidemic of typhoid fever in a small manufacturing town adjacent to Baltimore, where malarial fever has been a common plague for years. Many of the workmen, when ill, apply at the hospital. Not infrequently two or more of these men have come together, giving identical histories — or, if stupid foreigners, no history at all—and presenting similar conditions. And still, by means of the blood-examinations, we are able to send one home with the assurance that he will soon be well and able to work, while the other is prepared to undergo a long and tedious illness. Without such examinations we must either detain the malarial patients an unnecessarily long time, while we watch the effect of quinine and study the temperature curve, or send some of our typhoid cases back to work, in the hope that it is only malarial fever—surely, in some cases with disastrous results. When we remember how the two diseases may resemble one another in every particular, and how important it often is for these men to know the probable duration of their illness and when they can be at work again, the truly practical value of such a means of diagnosis is most fully appreciated.

No less valuable are negative results in those cases referred to above, in which we wish to determine whether chills are of malarial origin or are due to suppuration, so that operative interference may be called for. Quite recently a case in point was cited, and no doubt many others similar to it will be recalled. In this instance, in which in the course of an obscure cerebral affection chills occurred, it was "decided to give the patient the benefit of the doubt," and put him on quinine for a few days. The chills continued, an operation was performed, pus was found, but the patient died. It is, of course, impossible to say what might have been gained by operating as soon as examinations of the blood showed that the chills were not the result of malarial infection.

Thus far we have considered the use of this method of diagnosis in only the hospital ward and dispensary. In private practice the situation is different. Means of diagnosis that are available in the hospital are here too often impracticable on account of the time required for their employment or

[1] Reported by Osler in Johns Hopkins Hospital Bulletin, vol. i., No. 1, as above.

for want of proper apparatus. On the other hand, we are far more desirous of making the diagnosis and giving a true prognosis as soon as possible. Again, we cannot rely on the observations of friends or relatives, as for instance, in frequent temperature-taking, but must have means of diagnosis that we ourselves can apply.

Fortunately, blood-examinations are practicable in private practice, and since cases like the foregoing are quite as likely to occur here as in the hospital or dispensary, it is well to describe here the method used:

The drop of blood is taken from the finger-tip or the lobe of the ear. The latter is preferable on account of the skin being thinner and less sensitive. The part selected is washed well and then dried, to remove particles of dirt and sweat. A slide and cover-glass having been carefully cleaned, a very slight prick is made in the skin with a needle or pin. Immediately touch the cover-glass to the drop, without touching the skin, and quickly transfer it to the slide, the object being to prevent crenation of the corpuscles. Gently press or move the cover-glass to destroy the rouleaux, so that each corpuscle may be well seen. It will be found that only a very small drop of blood must be taken to accomplish this end. The sooner the examination is made the better, but the preparation will remain in good condition for two hours, which gives ample time for carrying it to the office or hospital. While the immersion lens brings out the bodies most distinctly, a good one-seventh objective is of sufficient power. With a little practice the preparation of the slide takes but two or three minutes.

The conclusions to be drawn are:

1. There are cases in which, from history, symptoms and signs, we cannot differentiate between malarial fever and certain other diseases.

2. In examining the blood of these cases for the presence or absence of Laveran's organisms, we have a means of diagnosis at once accurate, practical, and practicable.

3. Those cases are rare in which the organisms, though present, cannot be found, and they do not exist at all if the examinations are careful and the examiner has had experience.

THEORY AND PRACTICE OF WOUND-DRAINAGE.

BY N. F. GRAHAM, M.D.,

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IT may be laid down as a surgical axiom that, when very free, all wound-secretions should be afforded an easy exit, in order to prevent contamination of the wound by the putrefactive changes likely to take place in them. This is drainage, and it may be natural or artificial. Natural drainage is to be preferred, and is secured by leaving the most dependent part of the wound open; by having wide spaces between the stitches; by making new openings or by allowing the secretions to flow freely from the surface of a sore or superficial wound, or even from deep wounds in which there is no obstruction. Wounds that are allowed to free themselves of secretions in this way should not be obstructed by the dressings used, which should be composed of such materials as will readily and completely absorb the discharges or allow the discharges to pass freely through them.

Artificial drainage is one of the very oldest resources of surgery, and dates back to the early part of the fourteenth century. The *systematic* practice of artificial drainage is of but recent date, and owes its development to Chassaignac, who published his researches and conclusions on this subject in 1859. His teaching and practice were confined to wounds of a septic nature, and his method was simply the removal of purulent secretions by means of perforated rubber tubes. Since his day the practice of drainage has been extended so as to include the removal of non-infected accumulations by this means, with the purpose of removing tension and disposing of products in wound-cavities that might become septic.

The question of the value of drainage in wounds and of the means of best accomplishing it has attracted a great deal of attention during the past few years. There has never been a consensus of opinion on the subject. It is, however, agreed by all that superficial wounds that are allowed to remain open and heal by granuation, intra-peritoneal wounds when aseptic, and wounds in which a blood-clot is purposely allowed to remain, with a view to its becoming organized, do not need to be drained. If the best results are to be obtained, all suppurating wounds must be drained, either naturally or artificially.

Tubes of India-rubber, glass, or metal; silk thread; catgut and iodoformized wick, are the common and familiar materials used for securing drainage. Of these the rubber tube is the most frequently used, as it is the most reliable and most generally adaptable of all the varieties of drainage-tubes. Indeed, the only objection that can be urged against it is that it is not absorbed and therefore has to be removed. For this reason in ordinary aseptic wounds bone drains have been preferred by some.

In suppurating wounds the rubber drain is always to be preferred and should be substituted for the absorbable drain the moment a wound begins to discharge pus. This is because, even in suppurating wounds, bone and similar drains are unstable

and may disappear by absorption, and thus the end and aim of drainage be defeated.

When, at the time of operating, chloride of zinc, carbolic acid, or permanganate of potassium are used as antiseptics, they unduly stimulate a wound and cause a freer discharge of serum than when sterilized water or a mild solution of the bichloride of mercury are used. In former years, before we were so familiar with the value of the bichloride solution and boiled water, the more frequent use of stimulating antiseptics made necessary the more frequent use of drains to carry off the excess of serum that was produced by their use and rendered impossible the methods of dry dressing, now so successful. It is now the rule that, whenever practicable, fresh wounds should, as nearly as possible, be put in the condition of subcutaneous wounds or injuries.

While suppuration will take place in a certain limited proportion of subcutaneous wounds, the number, as compared with open wounds, is so small that Nature's method, as far as possible, should be simulated and such a primary dressing used as will best secure this end. Two indications are to be met in the drainage of wounds: first, the removal of fluids that accumulate in it immediately or soon after the operation. This may be called primary drainage. In the second place, we drain to remove pus and wound-secretions that have undergone septic changes. This we may properly call secondary drainage. Primary drainage is undertaken in the hope of preventing the conditions that render secondary drainage necessary. For the latter purpose tubular drains, preferably of rubber, must be used, because horsehair, silk thread, or spun glass, which act by capillarity, while useful for primary drainage, will not carry off pus or broken-down and softened tissue.

It might be assumed that any wound of considerable size or depth may require artificial drainage, while the clinical facts are that a considerable percentage of wounds, large and small, heal without an undue accumulation of serum or blood, or the formation of pus. Drainage in such wounds is very clearly not required. It is impossible to lay down a general rule that in any given case or even in any class of cases can be relied on, for the important reason that all patients are not alike. The personal equations of heredity, habits, mode of life, previous and present illnesses, etc., are very important factors. Even surgeons of small experience are well aware that many wounds heal kindly without the use of drains, while others prove troublesome even with the most careful management at the time of operation and the judicious use of drainage-tubes. Antiseptic precautions may as well be carried out in the one as in the other; the surroundings and after-treatment may in every particular be similar, yet the results may be very widely different. In the one case the processes necessary to repair go on uninterruptedly to a speedy and complete cure, while in the other we have suppuration and a tedious recovery. These opposite conditions in the behavior of wounds cannot depend wholly upon the operation or the character of the wound, nor can they be attributed to the after-management. This, naturally, should lead the progressive surgeon to study each case independently, instead, as is too often the case, of following a routine plan. The tendency is to run to extremes. One surgeon will place one or more tubes in every wound; another will drain only a certain class of wounds, while a third will abstain from drainage in all his cases.

It has been my experience that a very great proportion of all operation-wounds, made under modern aseptic precautions, and in which proper means are afterward used to keep them aseptic, will heal mainly by first intention, accompanied by but a small amount of discharge of any kind and no pus. On the other hand, the most scrupulous care will not absolutely prevent suppuration.

It is maintained by some of the best surgeons, that if an open wound could be placed in the same condition as a subcutaneous one, the results would be as satisfactory in the one variety as in the other. In his address before the International Medical Congress at Berlin, Sir Joseph Lister said that it would be a great advance if we could do away with drainage, and that the complete fulfilment of his early dream would be realized when our art shall reach so great perfection as to render drainage unnecessary. The practical surgeon of to-day can hardly look forward to the time when all wounds will heal without suppuration; certainly not if he has to rely on imitating Nature's methods as exemplified in the healing of subcutaneous wounds, because a certain percentage of subcutaneous wounds will and do suppurate.

The spontaneous generation of pus is by many good pathologists no longer believed to be possible. They say the infection must come from without by the introduction of pus-cocci, either by their spread along the hair, sweat, or other open ducts, or by their being carried to the injured parts by the blood. It is easy to see how pyogenic germs may be carried along open ducts to any secreting gland of the body, and, when it is in a state of inflammation, cause suppuration, but it is not by any means so plain why one subcutaneous injury will result in suppuration while another escapes. It is rare that pus forms at the seat of a fracture or dislocation, or after the subcutaneous laceration of tendons, though suppuration is common after severe bruises. Every country practitioner is familiar with the abscess commonly

known as "stone-bruise" that forms under the thick skin of the heel of a barefooted boy. There is a certain *tertium quid* that enters as a factor. This, I think, is found in the vitality and resistance of the tissues. Living tissues offer great resistance to microörganisms. On the other hand, bacteria cannot thrive upon the products of decomposition. What they need is dead, but undecomposed albuminoid substances. I think that a careful inquiry into the suppuration of subcutaneous wounds will show that this is precisely the condition that obtains in them. The tissues and cells are crushed in a considerable mass, and by the cutting off of the blood-supply they become dead and constitute a fertile field for the action of pus-cocci. These conditions do not obtain in cases exempt from suppuration, as fractures, etc. While the tissues may be more or less crushed they are not devitalized. No other explanation seems to me to be reasonable. If we admit that pus may form without the agency of micrococci, all our modern theory of pus-generation must fall to the ground.

After bruises and injuries that do not impair the integrity of the skin, pus may form in any locality subcutaneously. Pus has been found in every closed cavity of the body, including even the joint-spaces. It is difficult to see how, through the uninjured skin, infection can occur in such cases. I have seen a bruise, occurring in a perfectly healthy subject free from any dyscrasia, followed by the formation of pus; while abrasions and cuts deeper than the skin, received at the same time, would heal under the dried secretions without a sign of pus. That after injuries tissues will break down and disorganize subcutaneously is a common experience, and so long as such conditions obtain it will be impossible to dispense with the use of drainage-tubes, and just so long will Lister's dream be unfulfilled. It was in this class that Chassaignac, in 1855, used drainage-tubes and recommended them to the profession. They certainly were valuable aids to the surgeon in the days of septic surgery, and when wounds become septic they are yet so. If, as I have said, some subcutaneous wounds will suppurate, is it not reasonable to conclude that wounds treated in every way possible to imitate them will, in a certain proportion of cases, be followed by suppuration? Deeply penetrating wounds that are also contused need drainage from the beginning, because as a rule tissues that are lifeless will break down and become detached from the living tissues and should be allowed easy and safe exit. If, however, by the valuable aid of asepsis and the modern dressing of wounds we shall be enabled to control putrefaction as successfully as Nature does, as shown by the results in subcutaneous injuries, we may feel well satisfied.

What I have said is in the line of conservatism. The drainage of wounds has already been carried to the extreme and much injury has been done by its indiscriminate practice. Clearly, the majority of aseptic wounds do not require to be drained, and just as clearly, a septic wound must be drained. It is impossible to foresee whether a wound will remain aseptic, or what wound will become septic. Could these problems be solved at the outset, the question of the treatment of wounds would be easy. For some years my plan has been to close at once and without drains all clean-cut wounds, such as those made in amputations, the removal of large tumors, breasts, resections, ligations of arteries, etc. I offer Nature a chance, to be interfered with if, as a result of excessive accumulation of serum or blood in the wound cavity, there be an undue rise of temperature with tension; should this condition arise I at once relieve it by removing a stitch or two at the most dependent part of the wound, or by the introduction of one or more tubes. At this time I give preference to the rounded end of a soft rubber male catheter, properly disinfected and perforated. It can easily be inserted into any part of the wound, and, owing to the presence of the smooth rounded end, to the required depth.

A wound may be aseptic, while the discharge of serum and blood may be so great as to make drainage advisable to prevent pressure on the adjacent tissues, the vitality of which might be destroyed by the cutting off of their blood-supply, with consequent necrosis.

In such cases the tube in many instances may be removed in a few hours, often in less than twenty-four, and the healing process goes on uninterruptedly. During the first twenty-four hours or so, a drainage-tube does not exercise the influence of a foreign body in a wound any more than the serum and blood thrown out into its cavity. It is only at the moment when the tissues, the cellular elements, capillaries, etc., have reached the point where repair has just begun, when the first cells have assumed the embryonic state, that the drainage-tube becomes a foreign body, in the sense of interfering with repair. Were it not for the danger of the wound becoming infected by the removal of the dressings for the purpose of withdrawing the tube, no harm for the first day or two could come to any wound by the presence of a clean drainage-tube.

To teach that drainage is *never* necessary in aseptic wounds is not warranted by the facts developed in the experience of every observing surgeon. Wound-cavities, in some instances at least, will become distended by serum and blood to such a degree as to require the withdrawal of the fluid to conserve the integrity of the tissues. A moderate amount of serum is useful and a small amount of blood harmless, while, in some special operations on bone, for

the relief of club-foot, etc., special effort is made by the surgeon to secure a blood-clot, with the view of its becoming organized. However, in ordinary operation-wounds, the smaller the amount of blood, the better. A blood-clot in a wound is more liable to soften and break down than it is to organize. My practice now is, if a blood-clot is found to be present within the first twenty-four hours after an operation, to open up the wound and remove the mass. When I have failed to do so it has often been to the disadvantage of my patient. The following cases, selected from a number, will illustrate this point.

Mrs. R. H. S., aged forty-two, a healthy, well-developed woman, came under observation in May, 1890, in consultation with Dr. Balloch. She was suffering from cancer of the left breast, well advanced, with retracted nipple and a small portion of the skin below the nipple discolored and on the verge of ulceration. I advised removal of the breast, which was done in July, 1890, with the assistance of Drs. Balloch and J. F. Graham. On the morning of the day following the operation she complained of a feeling of tension in the wound. I felt satisfied that a considerable blood-clot must occupy the wound-cavity, but as I had been compelled to remove a portion of the great pectoral muscle in its entire depth, I concluded, in the hope of its becoming organized and thus preventing a sunken and adherent scar, to allow the clot to remain. The superficial cut and all parts not separated by the clot, healed by first intention, but in the course of a week the clot began to soften and I was compelled to open the wound and insert a rubber drain to carry off the blood.

I am convinced, as I was then, that had I opened the wound in the beginning and turned out the mass, I should have obtained a better and speedier result and contributed greatly to the comfort of my patient. Could I have foreseen that blood would be so freely discharged into the wound-cavity, I should have inserted a drain at the time of the primary dressing or placed my stitches wider apart. But when first closed the wound gave no indication of what followed.

As a contrast I will relate the case of Mrs. A., a strong, healthy woman, forty-two years of age, whose breast I removed for cancer some months previously to the operation on Mrs. S.

The variety of cancer was the same, and the condition of the patients as to age and general health very similar. Ten hours after the operation I was summoned to see her and was informed that she was suffering pain and a sensation of tension in the wound. I removed the dressings and found the wound-cavity distended by blood and serum, which were oozing at a number of points between the stitches. I at once removed all the stitches, except one at each extremity of the cut; turned out the blood-clot; washed out the cavity with a weak solution of bichloride; adjusted the flaps and stitched them as before; sprinkled the cut with iodoform; covered it with several thicknesses of iodoform gauze; applied a thick layer of absorbent cotton, and finally a snug bandage over all. She was at once made comfortable, slept well, and at no time did the temperature reach 100°. This first dressing was allowed to remain eight days, and when it was removed it was found that the entire wound had healed by first intention. The stitches were removed and the stitch-holes filled with iodoform. Not a single drop of pus formed during the entire healing process.

While it may be urged that a drain inserted at the time of dressing would have saved the necessity of reopening the wound, I believe the results were as good, if not better, by the method I adopted. I therefore continue to practise it.

The snug adjustment of the walls of a wound-cavity is a matter of no small importance in doing away with the necessity of drainage. Such adjustment, aided by the proper application of suitable compresses and bandages, is very efficient in limiting the oozing from the capillaries and even in controlling the flow of serum into the wound. The conditions that demand drainage in aseptic wounds are thus often obviated.

There is always a mean between two extremes, and, as in anything else, this applies in surgery and surgical procedures. In regard to drainage the middle course is the safe and proper one. Clearly, *all* wounds do not need artificial drainage, and just as clearly *some* wounds should be drained. The surgeon must decide as to the best course in each case. It is here that the judgment of the surgeon is best exemplified. In many cases the after-treatment of an operation-wound requires infinitely more skill and judgment than does the operation itself. I believe there is no other detail of the management of wounds and injuries that is so subject to whims and extremes as this of drainage.

I cannot better close these remarks than by giving the details of a case that lately came under my observation, and that may serve as a warning against the too free and indiscriminate use of the drainage-tube.

M. A., a young and healthy woman, consulted me, in February of this year, for persistent pain and swelling in the right arm, so great as to preclude the use of it in her work, that of a clerk. She gave a history of typhoid fever in 1889, followed by abscesses in both axillæ. The abscess in the left axilla healed spontaneously; that in the right axilla was opened November 1, 1890, by a competent physician of this city. Ever since, she has had pain and swelling as noted. On the humeral side of the right axillary space was a small purple spot, very tender, pressure on which caused intense pain running down the arm to the fingers. I could not

understand the case, and after a routine course of treatment and careful consideration of all the facts, I proposed an exploratory incision, believing that a foreign body was present, most probably a fragment of clothing. After some delay she agreed to this proposition, and on March 19 I made a small incision over the purple spot mentioned, and, after some search, I found the fragment of a drainage-tube. The wound healed kindly, and the patient is now completely well, with full use of the arm.

THE ETIOLOGY OF DYSENTERY: IS IT INFECTIOUS?

BY W. M. GREENLEE, A.M., M.D.,
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ALMOST every new epidemic of dysentery revives the much-mooted question as to the causation of this disease. Indeed, it is by means of careful observations, made during such an epidemic, that we may hope at last to arrive at the real truth concerning any of the causes leading to an outbreak of epidemic disorders. The tendency just now, of course, is to ascribe all diseases, and particularly those that make their appearance in epidemic form, to some microbe or special bacillus. While it seems to be conclusively established that some of our worst maladies are at least accompanied by characteristic bacilli, yet it is decidedly unscientific to generalize from such limited observation and insufficient data. I am ready to admit that certain diseases are due to specific microbes—for not to admit this would indicate a blamable obstinacy or a lamentable ignorance. But I also believe that many of these so-called specific germs bear a sequential and not a causative relation to the diseases in the course of which they appear.

This question is of practical importance, since it is very intimately connected with sanitation.

Let us particularize, taking dysentery as an example. Now, if dysentery is an acute disease produced by the entrance of a morbific germ into the human body, we should be forced to admit that it could only be produced by the entrance of such a germ, and that we could only have dysentery present when we had this special germ present. Otherwise it would not be a specific germ. That is to say—the disease cannot be produced by simple violations of hygienic laws *and* by a specific microbe, etc. The two causes are incompatible, in the very nature of things, since a bacillus requires a suitable nidus in which to develop, and cannot, of course, be developed when a person is merely careless about his food, clothing, etc. Therefore, the proof of the existence of one class, sustaining a causative relation, does away with the other class as a possible factor.

If, then, we can prove that a disease is caused directly by a violation of the simple laws of hygiene, we know that any germs that may appear in the course of the disease are a consequence and not a cause. This is where sanitary science comes in. If dysentery is due to a germ, then improved sanitation may hope to destroy all possible sources of infection. But, suppose we depend upon improved sanitary measures when the cause is not a specific germ, we shall find the disease appearing in spite of the most vigorous preventive measures.

Notes taken during a recent extensive epidemic at this place, and the study of other epidemics, suggest the following facts:

1. Dysentery makes its appearance in towns and villages almost perfect in their sanitary condition. It is a noteworthy fact that epidemics of dysentery appear in our smaller towns, perhaps with even greater frequency than in our large cities. The cause of this will be pointed out further on. We also know what a common and fatal disease dysentery was during the late war. The soldiers were certainly not subjected to what might be termed bad sanitation, except in those cases in which the disease appeared in crowded prisons.

2. Dysentery is a disease that shows a decided tendency to appear in epidemic form during a season when fruit is unusually abundant, following a year or two characterized by a marked failure in all kinds of fruit. This is true of the epidemic just closing, and the same fact has often been noted with regard to others.

3. Dysentery seems to break forth during the latter half of summer and follows a season characterized by severely hot days and very chilly nights. It will thus be seen that the conditions under which an epidemic of dysentery appears are just those most often met with in our smaller towns and in country districts. People engaged in hard work in the day and in the habit of sitting in their sweat-saturated garments, without coat and hat, are usually the victims of this epidemic. My notes show that by far the greater number of cases treated during the outbreak here presented a distinct history of over-indulgence in green fruit, repeated time and again. The first trouble occasioned by such over-indulgence was a simple diarrhea. This would moderate, and then the same process would be gone through again until dysentery would finally develop. I had several of the medical students take complete charge of the nursing of some of the worst cases. They even emptied the discharges, and had every opportunity of receiving into their systems the causative germs, if there had been any. Not one of these contracted the disease. It is all the more significant when I state that I had told them to eat no fruit and to be very careful both as to diet and the changes from the heat of the day to the cold of the night.

It would seem that dysentery is most probably a disease arising from violated hygiene alone, and should be combated by teaching the necessity of greater care in what is eaten, as well as the avoidance of all sudden chills.

ORIGINAL LECTURE.

LOCOMOTOR ATAXIA.

Abstract of a Clinical Lecture delivered at the Bellevue Hospital.

By W. H. THOMPSON, M.D.,
VISITING PHYSICIAN.

Gentlemen: These two cases will form the text of our lecture to-day. The first patient tells us that he has been sick for about one year, and that he first noticed a pain in the back, then difficulty in walking, and later on pain in the calf of the leg. He has had no pain in his side, and no headache. Urination is sudden, frequent, and burning, and the act is prolonged. There is a sensation of numbness about his feet.

This other man says that he has had quite severe pains in the bowels and back, and occasional attacks of vomiting; that there has been a feeling as though a tight cord were tied about his waist, and that walking has been difficult, for about one year. He thinks that his legs are weak or paralyzed, but you notice that he can flex and extend his legs, even against great resistance. He has had no choking spells. He has noticed that his eyes watered when reading, and that occasionally he saw double; but the two objects did not always occupy the same position with reference to each other. In addition to these symptoms, he tells us that he has had severe pains up and down the legs; and I wish you particularly to notice his gestures while describing these pains, for they are very characteristic. Always accustom yourselves to watch a patient's gestures very closely, for they will often give you important hints as to the nature of the pain. Thus, when a man complains of pain over his chest, and indicates its situation by placing the flat of his hand over the spot, the pain is most probably due to bronchitis; whereas, if he *points* to the spot with the tip of the finger, locating it very particularly, the pain is likely to be of pleuritic origin. Again, if a patient tells you that he has pain in his knee, and at the same time grabs the knee with his hands, you may be sure that the pain is not due to rheumatism, for rheumatism is an inflammatory affection, and the patient takes hold of the painful part much more tenderly. Such a gesture would be more often indicative of neuralgic pain. You notice that this patient's gestures indicate not only neuralgic pain, but pain of a particular kind, and very characteristic of the disease which we have under consideration—he describes the pain as shooting *up and down* his leg. More commonly, however, in locomotor ataxia, this pain shoots in one direction.

The disease we are studying to-day is called locomotor ataxia; but it is highly important to remember that the ataxia is, in many cases, by no means an early or prominent symptom, and owing to the Protean manifestations of this disease, mistakes in diagnosis are very common. By ataxia is meant a want of discipline between the muscles. They are no more paralyzed than are the muscles of an intoxicated person. Every muscular action of ordinary life is the result of long training of the muscles to work in unison, and to secure such a result requires the most delicate and harmonious adjustment of the opposing muscles. The "mental muscles" are those that carry out the purposes of the conscious mind, and these muscles are the first to show any lack of co-ordination. In the common act of sneezing, for example, an afferent impression starts from the nose, and calls one hundred and ten muscles into play to carry out the act. At first there is a long, steady action of the diaphragm until a considerable quantity of air has been taken in, then word is sent to all the muscles of respiration to be ready, and act in an orderly manner. If at this moment the person were tickled in the side, the muscles in this region would be prevented from acting in concert with the others, and the sneeze would not be a success.

Locomotor ataxia is due to a lack of discipline in the muscular system, and before the ataxic symptoms are at all prominent, such actions as require considerable co-ordination of the muscles, as, for instance, buttoning the coat, are performed not in a hesitating, but in a very hurried way.

The symptoms of locomotor ataxia are conveniently divided into three classes—viz., sensory, visceral, and ataxic; and the existence of this disease is to be suspected whenever any one of these three varieties is present.

(1) Sensory symptoms. These symptoms are especially characteristic of locomotor ataxia, and they may be the only ones. By these symptoms I was enabled in one case to predict the occurrence of ataxia eight years before it actually appeared. These symptoms are neuralgic and not inflammatory, and the patient will often localize them by pointing in the manner already noticed in the second patient, and describe them as being of a boring character. The "crushing" pains are more likely to be felt in the extremities, just above the ankle. The sensation of constriction is often felt just above the ankle or wrist, but when it is around the body, like a tight cord, it indicates a myelitis. Very often the patient will localize the pains with his finger, and speak of that spot as being very painful—yet an examination will often show that the area is really anesthetic. Similar areas may be located around the chest, and this symptom is often mistaken for an indication of some pulmonary or cardiac affection. These severe neuralgic pains often vanish quite suddenly. Another very characteristic kind of pain is the "lightning pain," that by many patients is described as very similar to that produced by an electric shock. These may at first be the only indications of locomotor ataxia, but they are sufficient for a diagnosis, and the other symptoms will develop later. In our first patient these sensory symptoms, although usually most important, are by no means prominent.

(2) Visceral symptoms. The commonest of all the symptoms of this class are those referred to the bladder. The mode of micturition has been already described by these two patients. The pain is usually felt toward the close of the act. The most frequent mistakes in diagnosis occur in connection with the stomach, which is often involved in what are known as "gastric crises," the patient being attacked at short intervals with all the symptoms of cholera morbus, accompanied by great

prostration. Quite commonly the bowels are also involved. When the larynx is affected, the patient suddenly awakens with a choking sensation due to spasm. The condition of the sense of vision is particularly important, and although this first patient told us that he had no trouble with his eyes, examination shows a highly interesting condition of the pupil, known as the Argyll-Robertson pupil, from the fact that he first directed attention to this symptom in locomotor ataxia. This phenomenon is observed in about thirty per cent. of these cases. The pupils are contracted—usually symmetrically—and insensible to light; but on asking the patient to read anything close to the eye, particularly fine print, the pupils contract during the effort of reading. Often the first sign of ataxia is seen in the eye. If a patient sees double because of permanent paralysis of the muscles of the eye, the relation of the two objects which he sees remains the same; but if the double vision be due to the fact that the muscles of the eye do not work in harmony, the images do not always bear the same relation to each other—sometimes being side by side, and at other times one above the other—this form of double vision is called "ataxic diplopia," and is very characteristic of locomotor ataxia.

(3) Ataxia. Although the patient's gait may be good, one can almost always elicit some evidence of ataxia. For instance, ask the patient to sign his name, and then ask some one familiar with his signature if the handwriting is the same as formerly. Usually, it will show a very firm down-stroke and a wandering up-stroke. Again, if ataxia be present, and you request the patient to button his coat, the motions of the fingers will be very precipitate. If asked to put a pin through a piece of paper, he grabs the pin as though it were a skewer which he was going to push through a piece of meat. If he attempts, with his eyes closed, to place one finger upon the tip of the nose he will be apt to miss his aim and strike the side of the nose, as you notice this second patient does. Similarly, when he attempts with his eyes closed to place his fingers tip to tip, he will be unable to do so. The first patient when tested in this way, does not show much incoördination.

Even if all three classes of symptoms described are absent, or are discovered with difficulty, there is one symptom that is very rarely absent—*i. e.*, the absence of the patellar reflex. You notice that neither of these patients exhibits such a reflex. There are very few other diseases in which it is absent. The most common one is diphtheria, and here the reflex may be absent for two months after the attack. It is also absent in peripheral neuritis due to other causes than diphtheria, and the most common of these are chronic alcoholism and poisoning by lead or arsenic.

CLINICAL MEMORANDA.

A CASE OF LUPUS OF ELEVEN YEARS' STANDING CURED BY THE TUBERCULIN TREATMENT.

BY M. MAGELSON, A.M., M.D.,
OF FERGUS FALLS, MINN.

MRS. O. A. is thirty-four years old, and has had seven children. In the spring of 1880, after exposure to cold and wind, she noticed soreness in and about the nose; the left ala of the nose became red, and sores formed which were covered with crusts; the sores healed and again broke out, and, after some time, the nose seemed to melt away. In the following years the sores spread over the face, healing and breaking out again in different places. When I first saw her on the 14th of March, 1889, the whole lower part of her face, from the place where the alæ of the nose should have been, round the mouth and down to the lower edge of the chin, was one continuous sore, partly covered with greenish crusts and partly showing red sparingly secreting surfaces without granulations, and with small, whitish nodules at

the bottom of the sores. The sore extended to the left eye, the lower lid of which had been entirely eaten away; there was also a considerable loss of substance at the right angle of the mouth, so that the saliva and food during eating were constantly coming out over the ulcerated edge of the lips. The upper lip was ulcerated down to the gingiva. The nose was entirely lost, the openings of the choana being covered with a membrane of scar-tissue, in which there was an opening, one-eighth of an inch in diameter, into the left nasal cavity. This membrane was partly covered with sores and crusts. There was a swollen gland under the left side of the lower jaw-bone. At this time she weighed one hundred and seventeen pounds, and was nursing a four-months'-old baby. She complained of some pricking in the sores, and of a tight feeling in the scar-tissue. Physical examination proved that her lungs were healthy. Her family history is good, her parents both living, past sixty years of age. By Ehrlich's method I found tubercle bacilli in the whitish nodules of the sores, and advised her of the nature of the disease, which had before been pronounced cancer, and treated with escharotics. I scraped out the sores with a sharp spoon, and applied iodoform ointment, 10 per cent., and ice compresses, and gave her internally arsenic in increasing doses, with some remissions during the summer. The sores healed up around her mouth, where I had done the scraping, and on the chin, and she was able to eat with greater ease. From this time I occasionally heard from her; she was living in Dakota, more than sixty miles away, but she was not getting

well, though the treatment was kept up on the same lines, and the sores were occasionally scraped by her physician. Some sores would heal, but new ones would again break out in the scar-tissue. As she notified me this spring that the disease was spreading over her whole face, and up on the forehead, I advised her to come to Fergus Falls and be treated with tuberculin. She arrived on the 11th of April, and from the upper border of the forehead to the lower surface of the chin, and from one ear to the other, the whole face was covered with sores and crusts. As I did not intend to rely upon the tuberculin alone, 10 per cent. aristol ointment was also applied, which, after a month, when the watery secretion from the sores became excessive, was changed to a strength of 5 per cent. Under local anesthesia in the beginning I used the sharp spoon on the sores. Pyoktanin was used afterward, and a 2 : 1000 solution of corrosive sublimate before and after the pyoktanin application. I also used Peruvian balsam to stimulate the development of healthy granulations. Internally, I gave Fowler's solution in increasing doses up to twenty-four drops three times a day. So far as the effects of the tuberculin were concerned, she showed the reaction described by Prof. Koch after the initial dose of 0.001 gram. After repeated inoculations every second, sometimes every third, day, the reaction was less, and from the 7th of May the dose was raised to 0.003 gram, and on the 28th of May to 0.005 gram. As the reaction was then very slight, I should have gone on increasing the dose, but as on the 3d of June she recognized movements of the fetus, and as the sores were healing, I suspended the tuberculin treatment. On the 13th of June all the sores were healed. I could not induce her to have her photograph taken when she first came under treatment, but the scars on the picture herewith reproduced, will show the extent of the sores. I had meanwhile several times tried by skin-grafting to cover the defect of the lower left eyelid, but the tears that saturated the different dressings applied frustrated my efforts. The dentist helped me to have an artificial nose and upper lip made, and the eyes were covered with London smoked glasses. The contraction of the scar-tissue has everted the lower right eyelid some, which, after her confinement, I intend to correct by operation. When she left, she seemed to enjoy perfect health, and weighed one hundred and twenty-seven pounds.

On the 8th of August she wrote me that her health was good, and that no new sores had formed.

YELLOW FEVER IN RIO.

By R. CLEARY, A.M., M.D.,
of Rio de Janeiro, Brazil.

Although I have nothing new or specific to offer for the treatment of yellow fever, yet because I have had some experience with the disease, and have familiarized myself with the practice of some well-known and successful physicians in this place, I would like to present a synopsis of a treatment that has been certainly not less successful than any other, both in my hands and in those of other and better known physicians.

That the pathogenic microörganism of yellow fever has not yet been discovered, or, at least, verified, notwithstanding the close and long-continued studies of Sternberg, Gibier, Carmona y Valle, Lacerda and others, must, I think, be accepted by the greater part of the thinking portion of the medical profession.

Dr. Sternberg has announced that he encountered no less than ten microörganisms in the alimentary canal alone, of cadavers dead of yellow fever, and that not one of them is pathogenic of the disease.

The epidemic of 1889, here in Rio de Janeiro, was very extensive, though less malignant than the one we have just passed through (1891); it was more extended over the town, but not so proportionately rife amongst the shipping, and whilst the death-rate was much greater, so great was the number attacked that the mortality per cent. was much less.

Although it is difficult to arrive at anything like certainty, I gather that the deaths were not more than 8 per cent. of all the cases, whilst in 1891 the deaths certainly were from 15 to 20 per cent. I do not give these figures as statistics, because, for well-known reasons, it is impossible to reach a definite conclusion, but they are only intended as opinions, and can be taken at what may be considered as their value. Of the thirty-four undoubted cases I treated in 1889, I was fortunate enough to lose only one, and most of them were foreigners newly arrived, and totally unacclimated in Rio. I adopted the usual symptomatic and expectant treatment, with the addition of Dr. Sternberg's alkaline and mercurial solution, which appeared in most cases to act like a charm. It was, however, apparently without effect in those cases in which it was only used late in the course of the disease.

In the epidemic of 1891 the disease appeared to take on a more malignant type, *all* the worst symptoms frequently appearing during the first twenty-four or thirty-six hours. As an example of this, take the following case:

On March 30th, at 5 P.M., I was called to Mr. T. H. A., an American, twenty-seven years of age, weak and much reduced by the abuse of alcoholic beverages, and only a few months in the country; the temperature was 39° C.; pulse 100, and every usual symptom more plainly marked than is customary. On March 31st the temperature was 38.8° C., pulse 82, all the symptoms intensified, streaks of black in the vomited matters, and the urine scanty. On April 1st the temperature was 37.5° C., the pulse 80, the skin moist and clammy, a total suppression of urine since the previous night, profuse, black vomited matter, and he was delirious. He died April 2d, at 7 A.M. This was a rapid case, was not singular by any means, and was, as the Brazilians graphically express it, "*fulminanto.*" It was treated on the principles that guided us in other cases, and no time was lost.

The following case is a typical one, and, as it embraces almost every emergency, I will give it in full, as a fair sample both of the disease and of its treatment:

Mr. C. H. L., an Englishman, thirty-two years of age, small and compact, but not weak, temperate in his habits, and about one year in the country, was attacked on May 4th. I saw him at 7.30 P.M., and found him with a temperature of 40.5° C., pulse 120, excessive frontal headache, pain in the back, extending down the thighs, eyes very much suffused and protuberant, skin moist and clammy, hyperemia and stagnation of the capillary circulation on the upper, front part of the chest.

This symptom was pronounced pathognomonic by Baron Torres Homem, the great Brazilian authority on the subject.

His bowels had not been moved for three days, and I gave him calomel 0.33 gram, with sodium bicarbonate 0.25, followed by three Russian capsules of castor oil in two hours, and antipyrine 0.50, ammonium acetate 2, and tincture of aconite one-half drop every two hours. On May 5th the temperature was 39.8° C., pulse 120, and weak, all symptoms exaggerated, and with great nausea; the bowels had been copiously moved four times. I gave him of mercuric bichloride 0.02, sodium bicarbonate 10, boiled water 1000, two tablespoonfuls every two hours, ice-cold, alternating with Murray's fluid magnesia 200, magnesium salicylate 2.50, tincture of aconite 10 drops, tincture of digitalis 2, a tablespoonful every two hours. Besides, for the nausea, he was also given of chloroform (pure) 25, camphorated alcohol 25, four drops in a teaspoonful of cold water. I also ordered the lower intestines to be washed out four times a day with boric acid 10, β-napthol 1, boiled water 1000. The antipyrine mixture was given occasionally to lower the temperature. On May 6th the temperature was 38.8° C., the pulse 82, and the stomach more quiet. He vomited once, the ejected matter presenting black streaks. The pains were now much easier, and there was a yellowish tinge in the eyes and upper part of thorax. As there has always been a decided rise of temperature toward nightfall, in addition to the previous treatment, quinine sulphate was given in divided doses. The urine contained some albumin. On May 7th the temperature ran up to 38.9° C., the pulse was 84, and there was about 15 per cent. of albumin in the urine. I continued the treatment, and as the chloroform and camphor had no more effect, I gave of cocaine chlorhydrate 0.10, Murray's fluid magnesia 200, a tablespoonful every two hours, or *p. r. n.* The urine became very scanty. I gave two hypodermatic injections of caffeine citrate 0.33, with an interval of two hours; at nightfall he urinated abundantly. On May 8th the temperature was 37.9° C., the pulse 72, the skin moist and soft, the tongue cleaning, the yellow tinge decided and dusky, and there was about 20 per cent. of albumin in the urine. I gave of aqua rosæ 160, tannin 2, alcohol 10, syrup of tolu 30, a tablespoonful every two hours, always preceded by salol 0.25 for the excess of albumin in the urine, alternating with the magnesia mixture prescribed on the 5th. As the temperature again rose to 39.8° at night, two capsules of antipyrine, each 0.50, were given, with an interval of one hour. On May 9th the urine was very albuminous—perhaps 40 per cent.—the temperature 37.4°, the pulse 68, the stomach quiet, very weak and nervous. I continued the treatment. On May 10th the quantity of albumin in the urine was less, the temperature 37.5,° the pulse 66. From this date he became convalescent, and was put upon a tonic; he rapidly recovered strength, although the case was complicated with an attack of malarial fever, and followed by congestion of the liver.

The diet all through the disease was iced boiled milk, in small quantities, seltzer water, and, when it appeared to be needed, a little brandy occasionally.

The accessory treatment was mustard plasters, small blisters, injections or intestinal washings of boric acid and napthol; and, as the magnesia mixture and Sternberg's mercurial, alkaline potion were disinfectant and antiseptic, thus the whole alimentary canal was always disinfected.

I have found brandy preferable to champagne, since the latter often adds to the already acid condition of the stomach, even though it apparently does good when it is taken. It is well known that the force of the attack in yellow fever is upon the alimentary canal; hence our rational treatment must be directed in accordance with this idea, though symptoms must be combated as they arise.

The two symptoms often fatal are suppression of the urine and black vomit, which is another name for hemorrhage. For the first, besides some diuretic medicine, hypodermatic injections of caffeine appear to act best in most cases, assisted by turpentine stupes to the lower part of the spinal column, frictions, hip-baths, etc. It is said that an able physician here has prescribed small, ice-cold clysters, so that they are retained near the bladder, but I have never used them with this object.

For the black vomit it is the rule to give ergotine, tincture of iron or gallic acid, but I believe they are of little benefit, and have found that by quieting the stomach with cocaine and counter-irritants, we are more generally successful, though as a routine practice, I always prescribe gallic acid, and have seen it apparently have good effects.

As for the quinine treatment, it is little used here, and, I must say, I have never seen one case benefited by it when used in the beginning, though in the third period of the disease its use is very frequently beneficial.

To return to the subject of black vomits: though I have never seen it used, or heard of such a thing, why may not *hot water*, as hot as it can be borne, stop the hemorrhage from the stomach, as surely as it does that from the uterus *post partum?*

SKIN ERUPTIONS FOLLOWING THE USE OF QUININE SULPHATE.

BY EDWARD A. WELCH, M.D.,
OF POTTSTOWN, PA.

THE following cases of skin eruption, due to the administration of quinine sulphate, are reported in the belief that the general practitioner should place on record careful observations of all instances of abnormal or unusual results following the use of drugs:

CASE I.—At 8 P.M. of January 30, 1891, J. W., a school-boy, fifteen years old, took gr. iv of quinine sulphate for the purpose of "breaking up a cold." I had seen him half an hour previously, and, with the exception of an incipient coryza, he seemed in perfect health, his temperature being 99°. At 9.30 P.M., an hour and a half after taking the quinine, the lad called on me in great alarm, with the statement that "he had the scarlet fever." His temperature was 99.6°, the pulse rapid, and he was in a decidedly nervous condition. On examination, I found his body (front and back) covered with an erythematous eruption of a bright, vivid-red color, disappearing on pressure, but returning immediately, and in many places closely resembling the rash of scarlatina. The surface of the skin was also decidedly hyperesthetic, a condition not present in the boy's normal state. He

stated that when he first noticed the rash, some ten minutes before, it was mostly on his neck and upper part of the chest, and seemed to be spreading rapidly. Further examination showed an efflorescence on legs, arms, feet and hands. A number of small, flat wheals, of the size of a pea, were at first visible, scattered at intervals over the body, but these to a large extent disappeared during the hour and a half that the patient was under observation, and became merged in the general erythema. The eruption, which was at first "patchy" in character, rapidly became confluent, and at length almost the entire surface was of a uniform, bright-red hue. Accompanying the eruption was an intense prurigo, so severe that the patient was with difficulty prevented from continual scratching.

A sedative and cooling ointment was applied, and the boy sent to bed. The next morning the eruption had almost entirely disappeared, and the boy was as well as ever, while in another twenty-four hours all traces of the exanthem had vanished.

Recognizing the possibility of a skin eruption due to errors of diet, I made a careful search for such possible cause, but could find none. The case seems to have been one of quinine eruption, pure and simple.

CASE II.—J. K., a school-boy, eighteen years old, at 7.30 P.M., on March 18, 1891, took grs. viii of quinine. At 10 P.M. there was noticed an erythematous reddening of the whole body, with occasional distinct spots (one-quarter to three-eighths of an inch in diameter) of a deeper color. There was no elevation of temperature. On the following morning the erythema was still persistent, disappearing momentarily on pressure. There was also at this time considerable prurigo. Examination of the membranes of the mouth, tongue and throat showed no departure from the normal condition. The redness gradually disappeared during the next two days, but the prurigo was sufficiently marked to be uncomfortable until the 22d. The attack was followed by moderate, flaky desquamation of the epidermis. No other probable cause than the quinine could be ascertained.

CASE III.—W. H., a student, nineteen years old, was not feeling well when, on May 16, 1891, he went to Philadelphia to visit friends. "Sunday night, noticing symptoms due to a cold, he took grs. x of quinine sulphate. In a few minutes he began to itch excessively all over the body. This was soon followed by nausea and repeated vomiting. He also had several diarrheal movements. During the vomiting he experienced a prolonged and rather severe chill. Later, after the nausea had subsided, he was hot and feverish, with some perspiration." On the following morning his Philadelphia friends noticed a rash on his face and neck; but there was no trace of this when I saw him some hours later, nor had he at that time any fever, prurigo, or symptoms of an exanthem.

I include this case with the others, although it did not occur while the boy was under direct observation all the time, as was the case with Nos. I. and II., and hence there was not the chance for certain exclusion of other agents than the drug.

Dr. Allen J. Smith has been elected Professor of Pathology in the University of Texas.

A CASE OF IMPACTED FECES; LAPAROTOMY; DEATH.

BY J. HERBERT DAREY, A.M., M.D.,
OF GRANGER, MINN.

ON the 20th of May, 1891, I was called to see Annie M., a little girl ten years of age, on account of a tumor that her parents had discovered in the left inguinal region. She had a history of having had the "grip" last January, and of having ever since a pretty constant and profuse diarrhea that nothing seemed to check. She had considerably run down in flesh, but continued to go to school. At times she would have severe attacks of cramp that doubled her up "like a jack-knife." Otherwise the personal and family history was good.

On examination a hard, nodular, freely movable, flattened tumor, painful on pressure, the size of an orange, was found in the left inguinal region. I advised a consultation with Dr. Kessel, of Cresco, which was agreed to by the parents. We suggested an operation for the purpose of finding out the nature of the tumor, and removing it, if possible. We had an idea that we should probably find a dermoid cartilaginous cyst, with a long pedicle, as the tumor was very freely movable.

On the 5th of June, after thorough preliminary antiseptic precautions, I performed a laparotomy, assisted by Drs. Kessel and Connolly. Ether was used, with a little chloroform at times, when the patient would not take the ether well. An incision from the pubes to the umbilicus was made, and after careful dissection through the sheath of the rectus and the aponeurosis of the transversalis muscles, the peritoneum was opened. The first thing that presented itself was the descending colon, filled full of hard, impacted feces. A loop of the colon was drawn out of the abdomen, and still a tumor could be felt from the outside. Upon exploring further, this tumor was found to be another loop of intestine, with impacted feces in it. The abdominal cavity was carefully explored, but nothing further could be found. The colon, from the sigmoid flexure for a distance of nine inches upward, was filled full of hard feces, and distended to a size of two and a half inches in diameter. The fecal mass in the center was about the consistence of rather stiff putty; but at both extremities, and particularly the lower one, it was so hard that no impression could be made in it with the fingers. It felt as hard as a stone. The abdomen was then sewn up with five deep and five superficial sutures, and the patient put to bed with hot-water bottles around her. The wound was dressed with a little iodoform and bichloride gauze, a good pad of absorbent cotton, and a roller bandage over all. She came out of the ether well. The temperature in the evening was $99\frac{1}{10}°$, the pulse 110. She made a good recovery from the operation. On the sixth day she had an elevation of temperature to $101\frac{2}{10}°$, due to a very profuse diarrhea.

The superficial stitches were removed on the sixth day, and the deep ones on the ninth. From the fourteenth to the seventeenth day she had an elevation of temperature that looked on the chart very like the rise of temperature in typhoid fever—1° higher every evening, with a good remission in the morning. The highest point the thermometer indicated was 103½°. This rise disappeared by lysis, and she seemed to be doing nicely. Two

weeks after the operation, I began to use injections with the rectal tube and the syringe to try to soften and dislodge the mass from below. The method I followed was to inject a half-pint of fresh ox-gall to soften the mass, and in half an hour to follow it up with a quart of warm water. It seemed to work very well. Every day some fecal matter, in the form of little, hard pellets, would come away that looked like the hard mass softened down. On the twenty-third day fully a pint of softened feces came away, and I was getting greatly encouraged and hopeful that I would succeed in removing the whole mass in time. The patient was doing remarkably well, too, sitting up in bed a little, writing letters, etc. But on the afternoon of the twenty-fourth day she began to vomit, and her temperature ran up to 102°. I gave a hypodermatic of morphine, ⅛ grain, and the next morning it fell to 100°, pulse 136, feeble and compressible. I had a consultation with Dr. Kessel. There was a good deal of tympanites, the abdomen was extremely tender to the touch. The hypodermatic of morphine quieted her stomach. I gave some bismuth subnitrate, three-grain powders, every two hours. After consulting with Dr. Kessel, we put her on fifteen drops of laudanum every hour. I stayed with her through the night, and gave the medicine myself. The respiration had been 40 to the minute, and under the laudanum I reduced it to 20. But the pulse did not come down much, staying over 100 all the time. Gradually she failed, and died at 2.30 A.M., on the twenty-fifth day after the operation.

This was a very instructive case to me. The operation was, I think, fully justifiable to determine the nature of the tumor. The profuse diarrhea was very misleading, and the tumor itself was so extremely hard that we never suspected impacted feces. In fact, I don't see how a diagnosis could have been made without the operation. That she had fully recovered from the operation is proved by the time that had elapsed before the fatal peritonitis set in. The only wonder is that with so large an impaction in the bowel it had not occurred months before.

CURRENT LITERATURE.

SPECIFIC GRAVITY OF THE BLOOD IN DISEASE.

QUESTIONING the reliability and practicability of the methods of determining the specific gravity of the blood that have hitherto been employed, SCHMALTZ, of Dresden, has adopted the pyknometric method as the most exact. For this purpose he employs capillary tubes of special form, with a capacity of about one-tenth of a cubic centimeter. In one case the specific gravity of the blood obtained by venesection, taken with a large instrument, was 1040.98, and with the capillary instrument 1041.48. As a result of 55 examinations of his own blood, and of examinations of the blood of 20 persons of both sexes, Schmaltz has found that the density of the blood is very little, if at all, influenced by taking food or fluids (including a quart of physiological salt solution), by intense bodily exertion, and the development of hyperemia of the skin at the point from which the blood is to be drawn. The specific gravity of his own blood was somewhat higher in the morning than later in the day, the greatest difference being included between 1056 and 1062.1, and being apparently independent of food and drink. The average specific gravity of the blood of 8 men was 1059.1, and of 12 women, 1056.2, showing a lower range for women than for men. The specific gravity remains fairly constant in healthy persons.

Schmaltz has tested the specific gravity of the blood of 95 patients, mostly women. 29 were chlorotic women with anemia, more or less acute, without known cause. In 9 of these the specific gravity of the blood fell below 1040, and in 2 below 1035. In the remaining 18 cases the specific gravity ranged from 1035 to 1049.

In 21 cases, existing anemia was known to have been a result of hemorrhages and severe blood-diseases. The figures obtained were higher than in the case of the chlorotics; 2 patients died; 1 had leukemia and endocarditis (sp. gr. 1034), and one septicemia and endocarditis (sp. gr. 1030). In 1 case of hematemesis, the specific gravity was 1031; in 1 of carcinoma of the stomach and liver, 1039, and in 1 of incipient phthisis it was 1036. On the other hand, in a case of severe metrorrhagia, in which the patient, who, a short time before the blood was examined almost died in collapse from hemorrhage, and was extremely anemic, the specific gravity of the blood was 1042. In the other cases—heart disease, Bright's disease, typhoid fever, etc.—the specific gravity ranged from 1039 to 1049

In a series of 33 cases, including one very anemic patient, all of the organs of whom were healthy, cases of dilatation and of ulcer of the stomach, tertiary syphilis, progressive phthisis, valvular lesions of the heart, diabetes, marasmus, articular rheumatism, and 2 convalescent cases, one of pleurisy with effusion, and one of acute bronchitis, the specific gravity of the blood suffered no material diminution, and in 2 or 3 cases was even abnormally high—1063 (progressive phthisis and heart-disease). Some of these cases lend support to the view of Oppenheimer, that when the proportion of hemoglobin and the specific gravity are normal, though the patient be anemic, there must be an abnormal distribution of the blood. It must be borne in mind that in some cases the specific gravity of the blood rises during inanition. In other cases, conditions of blood-stasis, such as occur in phthisis and in heart-disease, raise the specific gravity in the areas of stasis.

In 26 cases Schmaltz compared the specific gravity of the blood with the percentage of hemoglobin and with the corpuscular richness of the blood. He found that a lowering of the specific gravity goes hand-in-hand with a diminution of hemoglobin, while the specific gravity is in a large degree independent of the number of red blood-corpuscles.

In 4 cases of chlorosis cured, the specific gravity rose until it became normal; in other cases it increased, but failed to reach the normal without the disappearance of the other symptoms.

As a result of his studies, Schmaltz formulates the following conclusions: Under normal conditions the specific gravity of the blood in man varies within narrow limits; as a rule it diminishes considerably in anemic conditions, especially in chlorosis and diseases of the blood proper; the density of the blood is chiefly determined by the quantity of hemoglobin present, while it is in a large measure independent of the number of

red blood-cells; with improvement in the anemic condition the specific gravity of the blood rises, and with complete recovery attains the normal. It seems, therefore, that the specific gravity of the blood is an accurate index of the condition of the disease; when the circulation is retarded in the extremities—for example, in diseases of the heart and lungs—the specific gravity of the blood is not rarely elevated, and may, in spite of persisting anemia, be found normal. — *Deutsche med. Wochenschrift*, No. 16, 1891.

[Schmaltz describes his "capillary pyknometer" and his method of using it in the *Deutsches Archiv für klin. Medicine*, Bd. xlvii. 145. A capillary tube containing distilled water is weighed, the water is expelled and the tube again weighed—the difference in weight, of course, is the weight of the water. In the same way the weight of a capillary tubeful of blood is obtained. The weight of the blood and of the water being thus known, simple division gives the specific gravity.]

MEDICAL PROGRESS.

The Abortive Treatment of Buboes.—Welander (*Archiv f. Dermatol. und Syphilis*, No. 3, 1891) reports a second series of fifty-nine cases of bubo treated by means of injections of benzoate of mercury. In all, he has now treated one hundred buboes in this way with thoroughly satisfactory results in seventy-eight. He uses the following formula:

℞.—Hydrargyri benzoatis . . . gr. v.
Sodii chloridi . . . . gr. jss.
Aquæ destillata . . . . f℥j.
Sig.: ♏xv as an injection.

As a result of his observations he has arrived at the following conclusions:

1. If the bubo display a virulent tendency, the injection does not affect its development, and suppuration occurs.

2. When decided fluctuation exists and the skin is thin and cyanotic, the injection can only hasten the disappearance of the infiltration. As a rule, the bubo must be opened.

3. If fluctuation is considerable in degree, but the skin, though red, is thick and well nourished, the chances are good that an injection into the adjacent infiltrated area will (possibly in 50 per cent. of cases) obviate the necessity of opening the bubo.

4. If there is little or no fluctuation, it is highly probable (possibly in 90 per cent. of cases) that, even though fluctuation subsequently becomes decided and a few drops of pus ooze from the site of puncture, the bubo will disappear, leaving no trace of a cicatrix.—*Monatshefte f. prakt. Dermatol.*, July 15, 1891.

Dentition and Infantile Disease.—Brothers (*Archives of Pediatrics*, August, 1891) maintains that dentition is rarely or never a cause of death. He believes that dentition may be precocious or retarded in otherwise healthy children or in families. In the majority of healthy, breast-fed infants the eruption of the first teeth begins at six and a half months and is completed at thirty months. In children brought up on a mixed or artificial diet, primary as well as secondary dentition is distinctly retarded. Congenital disease—tuberculosis, syphilis, endocarditis—seems to retard dentition. Rhachitis has a pronounced retarding influence upon dentition. Scrofulosis seems to accelerate the eruption of the first teeth, but does not affect subsequent dentition. In cases of defective cerebral development, as in idiocy, the whole process of dentition is retarded. Chronic disease retards the eruption of the first teeth, but does not influence subsequent dentition. In marantic children, primary dentition is precocious, but secondary dentition is delayed. Epileptics seem to have their first teeth early.

Cæsarean Section for a Giant Infant.—Rachel and Neumer (*Répertoire d'Obstét. et de Gynéc.*, May 25, 1891) report the case of a woman, forty years old, the abdomen of whom, in the twelfth pregnancy, was enormously distended. The labor not progressing, version was attempted, but the fetus would not pass the superior strait. Disarticulation of the leg, preparatory to evisceration, was attempted, but was unsuccessful. Finally, Cæsarean section was decided upon. The mother died soon after the extraction of the fetus. The latter, almost exsanguinated as a result of the amputation, weighed twenty-two and a half pounds. The parents were not unusually large. The only explanation of the great size of the fetus lay in the age of the mother and the number of pregnancies and in the fact that the fatal pregnancy had passed one month beyond term.—*Lyon Médical*, July 12, 1891.

Hypnotism.—In a paper read before the Colorado State Medical Society, Eskridge (*New York Medical Journal*, August 1, 1891) stated that hypnotism is real and subjective and not dependent upon any mysterious influence of the hypnotist over the subject. The therapeutic value of hypnotism is governed by the mental impressions made during hypnosis, a state of increased impressionability. Much that is accomplished by hypnotism may be accomplished by repeated impressions without hypnosis. Hypnotism carries with it certain dangers to the hypnotist, to the subject and to the community, to be obviated by proper precautions. It remains to be determined whether or not the therapeutic value of hypnotism is greater than the unavoidable dangers of its application. The practice of hypotism should be under state control and restricted to physicians and other scientific investigators.

Cerebral Syphilis.—As a result of his observations during a long experience, Tarnowsky (*Archiv f. Dermat. und Syphilis*, No. 3, 1891) excludes progressive paralysis and tabes from among the manifestations of syphilis of the nervous system. It is his view that the debilitating influence of syphilis merely prepares the way for the development of progressive paralysis and tabes in those in whom there exists a congenital predisposition to these diseases. Tarnowsky makes the further proposition that if, in cases of syphilis with nervous manifestations, tabes and progressive paralysis can be definitely excluded, 90 per cent. will be cases of cerebral syphilis, in the majority of instances susceptible of cure. —*Monatshefte f. prakt. Dermat. und Syphilis*, July 15, 1891.

Rupture of the Thoracic Duct.—EYER (*New York Med. Record*, August 1, 1891) has reported the case of a railway brakeman, who, while engaged in work, was severely squeezed. Right-sided pneumonia subsequently developed. On the seventeenth day after the injury evidences of deep-seated suppuration were apparent near the anterior superior spine of the right ilium. An incision disclosed a fistulous tract, from which emanated a discharge having a fecal odor and appearance. In the course of a few days the offensive odor disappeared. The discharge was now opaque and milky. An intestinal fistula was diagnosticated. Emaciation progressed with extreme rapidity. Thirty-eight days after the reception of the injury the patient died. At the autopsy an opening was found in the thoracic duct at the level of the diaphragm.

Removal of the Apex of the Lung for Tuberculosis (*Gazette hebd. de Sci. Méd.*).—In a case of early tuberculous disease of the apex of the right lung DR. TUFFIER has successfully resorted to operative measures. The means adopted, based upon experiments made upon a dog, consisted in a simple incision through the second intercostal space anteriorly. Afterward the parietal pleura was divided, which induced a kind of sub-pleural pneumothorax; the apex of the lung became reduced in bulk sufficiently to be easily drawn through the wound; it was then cut away by the écraseur, and the stump sutured to the intercostal incision to prevent retraction of the lung. Dr. Tuffier exhibited the patient, who had progressed very favorably after the operation.—*Provincial Medical Journal*, July 1, 1891.

Chylous Ascites.—VALI (*Wiener med. Presse*, July 12, 1891) presented to the Royal Society of Physicians, at Budapest, a woman fifty-eight years old, who, following an attack of fever a year previously, had complained of pain in the hepatic and inguinal regions. Several months later, enlargement of the abdomen was observed. On puncture for the third time, after the lapse of varying intervals, three gallons of a yellowish-white, translucent, milky fluid, oily to the touch, was evacuated, on the surface of which, after standing, a creamy layer formed. The subjacent fluid was alkaline, of a specific gravity of 1013.3, and made up of 964.8 parts of water and 35.2 of solids (including albumin, fat, salts, peptone, sugar, and urea). Microscopically, the granular sediment was found to contain fat-globules, lymph-cells, and blood-cells.

Post-apoplectic Hemianopsia.—LEYDEN (*Wiener med. Presse*, July 12, 1891) reported to the Society for Internal Medicine, at Berlin, the case of a woman sixty-nine years old, with left hemiplegia, left ptosis, and conjugate deviation of the eyes and head to the right, who, for three days presented the hemianoptic pupillary reaction or immobility. The pupil contracted on illumination of the intact half of the retina, but not on illumination of the anesthetic half. Wernicke has demonstrated that this peculiarity depends upon a lesion interrupting the pupillary reflex arc in front of the corpora quadrigemina. When the lesion and consequent reflex interruption are behind the corpora, the pupils react. In the case in question, the autopsy confirmed the accuracy of the observation—a lesion was found in the quadrigeminal region.

The Elimination of Micro-organisms in the Sweat.—In a case of chronic pyemia, BRUNNER (*Berliner klin. Wochenschr.*, No. 21, 1891) found the staphylococcus pyogenes albus in the blood; and after the administration of diaphoretics, he was able to demonstrate the presence of the same organism in the sweat. Stimulated to further investigation, he inoculated a young pig with cultures of the staphylococcus aureus, a cat with anthrax bacilli, and another pig with the micrococcus prodigiosus. In each case Brunner was able to demonstrate the presence of the respective organism in the sweat, and in the last, in the saliva as well.

The Etiology of Erysipelas.—As a result of his observations, and from a study of the literature of the subject, JORDAN (*Archiv für Chirurgie*, 42, ii., 1891) has concluded that erysipelas is etiologically not a specific disease; as a rule, it is caused by the streptococcus pyogenes, but it may also be caused by the staphylococcus pyogenes. The etiological agent probably finds its way into the blood in every case. In this way metastases may result: the pyemia of erysipelas is thus primary—dependent upon the erysipelas coccus. The variability of action of the pyogenic cocci depends upon their localization and variations in their virulence—thus quantitative.

The Conservation of Living Malarial Parasites.—Failing in his efforts to cultivate the parasites of malaria in artificial culture-media, ROSENBACH (*Berlin klin. Wochenschr.*, August 24, 1891) endeavored to reproduce the natural conditions of life of the organisms. To accomplish his purpose he used leeches, which he applied in the splenic region in cases of malaria, and found that by opening the leeches at the end of forty-eight hours the apparently normal blood containing parasites could be obtained. It even appeared that in the interim the parasites underwent some changes of development.

Idiocy and Hermaphroditism.—MORAVCSIK (*Wiener med. Presse*, July 12, 1891) presented to the Royal Society of Physicians, at Budapest, a well-developed child eleven years old, of doubtful sex, with a head smaller in all dimensions in proportion to the size of the body, and an especially narrow forehead, and with a well-developed penis at the upper angle of the labia. The child had been educated as a girl. Its voice and manner were rather those of a boy. Its mental development was slight. Writing was done with the left hand and from right to left.

Inhalation of Oxygen in the Cyanosis of the Newly Born (*Bulletin Obstétricale*).—After resorting to various measures for the relief of cyanosis, DR. BONNAIRE adopted the plan of conveying through a tube a current of oxygen to mix with the atmosphere surrounding the child. The general condition improved rapidly under this plan of treatment. The remedy appears to combat the secondary conditions of respiratory weakness and general asthenia. Artificial warmth is a necessary condition for the administration of oxygen to be successful.—*Provincial Medical Journal*, July 1, 1891.

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SATURDAY, SEPTEMBER 19, 1891.

THE TREATMENT OF INFECTIOUS DISEASES.

THE richest fruits of the science of bacteriology are yet to be realized. We have already learned much in the way of rational prophylaxis, but there is much more to be learned, both as to the prevention and the cure of disease. It would be folly, however, with the unravelling of the many knotty problems in the causation of disease, to anticipate either a therapeutic revolution or revelation. On the contrary, it is probable that many current methods of treatment (empirical though they may be) will be shown to be useful in virtue of their bactericidal activity. In illustration, we need but advert to the use of mercury in syphilis, and of quinine in malarial fevers, and we have no more perfect types of specific therapeutic measures than these drugs. Though the one disease is not yet generally admitted to be dependent upon a bacterium, the evidence is conclusive that the other is a result of the presence of a parasite in the blood. Our new knowledge, however, does not alter our therapeutics. If syphilis is a microbic disease, it can occasion no surprise that such a powerful microbicide as mercury should be an effective therapeutic agent in syphilis. It is known that quinine inhibits the corpuscular activity of the blood and that it is antiseptic. With the parasitic nature of malarial diseases established, the usefulness of quinine in these diseases needs no further explanation. At this juncture we are confronted with the fact that germicidal remedies cannot be interchangeably applied in the treatment of germ-diseases. In other words, a remedy of especial utility in one condition may be quite nugatory in another. Thus mercury has no curative effect in malarial disease, quinine none in syphilis. It will still be necessary to determine, perhaps empirically, the special agent suitable for the individual disease, as well as the precise mode of action in the cure of each case.

What has already been said will let us now take up for consideration the *rationale* of the treatment of erysipelas. The most popular remedy in the treatment of erysipelas is perhaps iron and quinine in combination, of which it must be admitted that it is reliable and efficacious. Another remedy is pilocarpine, injected subcutaneously, which acts with almost specific promptness and efficacy. A third remedy to which we shall refer is the cyanide of mercury, which, injected subcutaneously, close to the seat of disease, has in the hands of some given gratifying results. The mode of action of quinine and iron, and of the cyanide of mercury, needs no further elaboration.

We know that physiologically pilocarpine is a powerful diaphoretic. This property depends not only upon the cutaneous hyperemia developed, but also upon a special influence upon the secretory apparatus. As a result of both of these conditions, the skin and subcutaneous tissues are flushed with blood and excessive exudation. The vital activity of the streptococcus of FEHLEISEN is heightened. Living faster, it dies faster. The increased production of the excrementitious products of bacterial activity causes the speedy death of the organism and the cessation of the disease. Add to this the fact, now demonstrated beyond cavil, that bacteria are eliminated in the perspiration, as well as in the saliva and in the urine, and we require no more to make clear the usefulness of pilocarpine in erysipelas, though it is not impossible that the antiseptic qualities of the body-fluids, with which the tissues are deluged, play some part in the limitation of the disease.

In this connection another fact presents itself. The intimate relation between erysipelas and parenchymatous nephritis is well recognized. Not only

does nephritis appear as a common complication of erysipelas, but those with nephritis show a special predisposition to the development of erysipelas. That there should be an infectious nephritis (microbic or toxic) in association with erysipelas may be readily understood, while it may readily be conceived that the defective elimination of excrementitious products on the part of a kidney damaged by disease will throw additional work on the cutaneous excretory apparatus, with a diminution of resistance or the establishment of conditions favorable to the invasion and propagation of the streptococcus.

COMMERCIAL ENTERPRISE AND PROGRESS IN THERAPEUTICS.

THE enterprising spirit of the modern drug trade has had many good results, some evil ones. Even to its good results there is a sad side; and the observant student of cotemporaneous medical history must at times entertain grave apprehensions as to the future of therapeutic science among the rank and file of American physicians. Let us look at one or two striking facts. More than thirty years ago, BENJAMIN WARD RICHARDSON introduced hydrogen dioxide as a therapeutic agent, and during the intervening years he has at intervals worked out and published its manifold uses. Other reliable writers made occasional report of the action of the drug, or enumerated it in lists of agents applicable in certain conditions. It attained, however, in America at least, but a limited repute and employment. Within a few years—less than a decade—a manufacturing chemist has largely advertised in the reading and other columns of medical journals and by means of circulars, the peculiar virtues of his brand of the drug. Immediately we find a host of writers springing up to quote from one another the statements of this manufacturer and the excellence of his product. Out of a dozen or two of these, one may vaguely refer to RICHARDSON, but none seems to be at all aware of the thorough character of that author's researches; and some propose as novel, expedients that he has long since tried and either approved or rejected.

The obvious state of affairs is that the little knowledge these writers have, comes from the circulars of the manufacturer and not from the teachings of the physician.

Very recently a manufacturing firm has prepared and circulated very extensively a secret mixture of coal-tar products, under a name fashionably beginning with *Anti*. Nobody knows anything about this powder except what the manufacturers tell him. But we find some apparently reputable physicians rushing into print to extol its superlative virtues in every imaginable and unimaginable painful or febrile affection; and many others must be experimenting with it upon the lives of their patients, or the manufacturers would not find it pay to distribute their pharmaceutical and literary products so extensively as they are doing.

Thus we see one of the most useful of therapeutic agents, introduced after careful and thorough investigation by a leader of medical thought, practically ignored until fathered by a manufacturer; and then adopted not through the reports of the scientific investigator, but through the commercial enterprise of the manufacturer. On the other hand, we see an unknown, possibly dangerous and probably worthless, mixture, extensively used without any preliminary scientific investigation or reliable clinical report, simply and solely on the merits of its advertising.

"THE PEOPLE'S BATH."

IF it be a pleasure to give pleasure to others, how great must be that of the New York gentleman who sent $200 to be used in supplying free baths to the unwashed boys of New York. He gave 4000 boys an opportunity that they greedily seized upon of getting an excellent and decent washing. And when one considers that the good indirectly done by these baths is far greater than the pleasure, the originator of this movement must feel that he has certainly accomplished a great reform and work in the world. DR. BARUCH would be a little more than human if he were not elated at this practical demonstration that all "hobbies" are not "mere theories," and that the "cold-water hobby" is one that well ridden will do great good to a whole community. He has made it possible for a New York working-man or boy to have the best kind of a bath, cold or warm, with pure water, in a private room, with a new cake of soap and a clean towel—"all for five cents, and if the five cents is hard to find, the bath may be had scot-free."

Such things as this are bright compensations for many of the evils of civilization. Every city awaits a duplication of this noble charity, and each of us should try to bring it about.

SOCIETY PROCEEDINGS.

SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

Held at London, August 10 to 17, 1891.

(Continued from p. 310.)

In the Section of Preventive Medicine, Dr. Edward Ballard considered the subject of "Meat Inspection and Food Poisons." He reported twelve instances of poisoning by articles of food. The symptoms were those due to a virulent chemical poison produced by a microörganism either in the food or in the body of the recipient of the food. The precautionary measures recommended were:

1. Thorough cooking of such prepared foods as ham or bacon. 2. Scrupulous cleanliness and ventilation of places where the food was stored or where pork was salted and dried. 3. The adoption of precautions to prevent the rise into such places of ground-air or the entry of other morbific and unwholesome emanations.

Dr. Victor Vaughan quoted cases from his experience similar to those described by Dr. Ballard, and emphasized the importance of the work that those who were called upon to investigate food-poisoning must do. The method of procedure must be both chemical and bacteriological. A careful and thorough search for inorganic poisons should be made. The germs found should be grown under conditions as nearly identical as those under which the suspected food had existed as could be obtained. Tests should be made, not only for the basic products of putrefaction, but for the bacterial proteids as well. Physiological tests upon lower animals should never be neglected.

Dr. Arthur Ransome, F.R.S., read a paper on "The Need for Special Measures for the Prevention of Consumption." That the disease was curable was proved by the facts that (1) the post-mortem examinations of persons dying from other diseases afforded unmistakable evidence in from 25 to 50 per cent. of spontaneous cure of tuberculous disease; (2) by the testimony of many physicians, among whom the speaker was one; he had satisfied himself that in the large majority of cases a fatal issue was brought about not by one or two, but by repeated invasions of the bacillus from an unhealthy environment. That the disease was preventable was shown in (1) the statistics of the British army, in which the mortality from lung-disease had been reduced to one-third or one-tenth of the former rates by attention to drainage and ventilation of barracks; and (2) by the statistical researches of Dr. Buchanan, who had shown that in certain English towns the mortality had been reduced by drainage; and (3) by the reduction in the general phthisis rate from 2.5 to 1.5 per mille since the passing of the Public Health Acts. Since phthisis was curable, and since it was known that many persons did recover from it, the number of susceptible persons must be very large, and the necessity for preventive measures the greater. Tuberculosis was communicated occasionally by direct personal intercourse, more frequently by the milk or flesh of tuberculous cattle, by the inhalation of tuberculous dust, and by residence in an infected house or urban area. As preventive measures he advocated (1) notification of cases; (2) disinfection of fomites, spittoons, and houses; (3) provision of ample hospital accommodation (by the local authorities) for patients too ill to work; (4) general sanitary measures, including ventilation, drainage, and reconstruction of unhealthy areas.

Sir Dyce Duckworth opened the discussion on "The Relation of Alcoholism to Public Health, and the Methods to be Adopted for its Prevention." He stated that the opinion of the medical profession was that no harm appeared to ensue from alcohol when used legitimately—that is, in small quantities and with meals. Bad (impure) alcohol was harmful. For the careless drunkard stern measures ought to be employed, such as cumulative fines, deprivation of electoral franchise, and corporal punishment. Hopeless cases were those with an ancestry that had abused the use of alcoholic drinks.

Professor Harald Westergaard stated that the effect of alcoholism on public health depends not only on the average quantity consumed, but on the distribution of this quantity. In several countries an enormous part of the divorces bear some relation to the abuse of strong liquors. The inmates of poor-houses and lunatic asylums very often are the victims of intoxicating drinks. The large number of police offences and crimes caused by alcoholic excess will show to what an extent in many countries alcoholism claims the attention of the public. He also considered the influence of alcoholism on the mortality-rate, and made reference to the legislation for the suppression of the abuse.

Dr. Norman Kerr said that the evil of intemperance could be remedied (1) By recognizing inebriety as a disease, and drunkenness as very often but an effect or symptom of disease. In the Dalrymple Home, though the previous average term of alcohol-addiction had been nine years, more than one-third of the cases had afterward done well. Penal discipline had been a failure. (2) By amended legislation to provide for (*a*) the compulsory reception and retention of inebriates too demoralized to apply of their own accord; (*b*) the reception of voluntary applicants on a simple agreement, without appearance before justices; (*c*) the care and treatment of the poor and of those of limited means. It would be well also for guardians to have power to pay for the care and treatment of pauper inebriates, and for the authorities to establish special hospitals for the detention and treatment of inebriates convicted of crime. Immunity from the physical, mental, moral, and social ravages wrought by alcoholism could be eventually secured only by general abstention from even the "limited" use of intoxicants; their exclusion from social, political, and sacred functions; and the scheduling of alcoholic beverages as a poison under the Pharmacy Acts, or, by some other legislative enactment, the prohibition of their manufacture and common sale.

Dr. Isambard Owen stated that the conclusions appended to the "Collective Investigation Report on Intemperance" of the British Medical Association clearly stated that habitual indulgence in alcoholic liquors had a distinct tendency to shorten life.

Dr. Richard Sisley read a paper on "The Prevention of the Spread of Epidemic Influenza." He contended that influenza spread along the lines of human intercourse, and was not, always at least, wind-borne.

Attention to general hygienic measures rendered the spread of the disease less rapid; quinine was not a certain prophylactic, but there was some evidence in favor of the prophylactic value of the application of a solution of boric acid to the conjunctivæ. The main point to be attended to was the avoidance of infection during an epidemic. He advocated special care to prevent the introduction of the disease into large public institutions in which it was apt to spread rapidly, the closure of elementary schools, and the disinfection of letters and parcels, in addition to personal precautions.

DR. ROBERT W. FELKIN considered "Malaria, Enteric Fever, and Phthisis." He discussed the various reasons for holding that malaria was a definite disease due to the same cause under whatever guise it appeared. He did not believe that typho-malarial fever existed as a separate disease. Black-water fever was, in his opinion, a severe form of malarial fever, and not a definite, distinct disease. There seemed to be a certain antagonism between malaria and phthisis, for wherever malarial fevers were most rife in Central Africa he had never seen a case of phthisis, which was only met with, so far as he was aware, in localities where malaria rarely occurred—namely, at high altitudes.

DR. PROSPERO SONSINO read a paper on "The Most Efficacious Means of Preventing the Spread of Entozoal Diseases in Man." The most important prophylactic measures were those to be taken by the individual. Pure water, cleanliness in the keeping and cooking of food, and personal cleanliness, were points dwelt upon. He insisted on the need of care in making use of special forms of food used by the natives of countries possessing special entozoa. His observations had led him to the conclusion that in hot climates three forms of entozoa—anchylostoma duodenale, filaria sanguinis hominis, and Bilharzia hematobia—were important factors in the production of disease and mortality.

In the Section of Bacteriology, DR. J. BURDON SANDERSON opened the discussion on "Tuberculosis." He formulated the following propositions:

There is no sufficient reason for supposing that in the human adult the introduction of the bacilli of tubercle by enteric absorption is the efficient cause of tuberculosis. In infancy a large proportion of the apparently idiopathic tuberculous diseases of the lymphatic system are probably due to the penetration of bacilli into the organism from the intestine; but the evidence that we at present possess on this subject is not sufficiently precise or extended to serve as a basis for prophylactic action. For this reason the origin of tuberculosis in infancy is a subject that urgently requires investigation.

It has been proved that the ingestion of any material which contains the bacilli of tubercle is a source of risk to the consumer, but the conditions that limit this risk are insufficiently known. It would, therefore, be unjust to enforce the destruction of any specimen of meat apparently healthy, even though it were known to be derived from a tuberculous animal, excepting on evidence given by an expert as regards the particular case that it would be infecting if administered to test-animals.

As regards the duty of the State in relation to the prevention of tuberculosis, what is immediately required is, first, that tuberculosis should be added to the list of diseases regarded by the law as contagious; and, secondly, that an efficient system of skilled inspection should be created. This is desirable, not merely as a first step toward prevention of the sale and consumption of tuberculous meat, but as an indispensable means of acquiring better information than now exists. To be of use it must be conducted by men of technical skill under scientific guidance.

In conclusion, Dr. Sanderson expressed the belief that the consumption of unboiled milk during the years that follow weaning must have its share in bringing about the fatal prevalence of tuberculous disease at that period of life. He held that the sale of contaminated milk ought to be stopped by all possible means.

DR. B. BANG read a paper on "The Alleged Danger of Consuming the Apparently Healthy Meat and Milk of Tuberculous Animals." He maintained that from an economic point of view it was scarcely feasible to interdict the use of milk and meat from tuberculous animals. Milk ought always to be boiled. Difficulty is encountered in the preparation of products derived from milk, such as cheese and butter. To overcome this, the milk is first exposed to a heat of from 140° to 164° F., by which tubercle bacilli possibly present are sufficiently attenuated to be incapable of infecting the alimentary canal. As, however, many people object to the taste of boiled milk, it becomes an important question to determine whether the milk of phthisical cows is really a source of danger in the majority of cases. Dr. Bang has determined that when the udder is affected with tuberculosis there are usually numerous bacilli in the milk, which is consequently extremely dangerous. But he also finds that mammary tuberculosis is not so common as was at one time supposed. He maintains that although in many cases the milk from phthisical cows is not virulent when the mammary gland is unaffected, it is in a certain proportion of cases, and should always be looked upon with suspicion, and it is absolutely necessary to take prophylactic measures against the use of such milk. With regard to meat, flesh itself very seldom contains any tubercle. Nevertheless it has been proved by a number of experiments that muscle-juice may contain tubercle bacilli. The eating of uncooked meat should be discouraged; but the best means of avoiding danger to the health of man is to take all possible measures for preventing the propagation of tuberculosis among domestic animals.

PROFESSOR ARLOING held that, with few exceptions, the total condemnation of tuberculous meat was necessary. The flesh of tuberculous animals should be suspected as dangerous to health, especially as meat is often undercooked, the bacilli remaining pathogenic.

PROFESSOR MACFADYEAN and DR. WOODHEAD read a paper on "The Transmission of Tuberculosis to Man by Means of Flesh and Milk Derived from Tuberculous Animals." They held that intestinal and mesenteric tuberculosis was most common in children shortly after weaning, when cows' milk was substituted for mothers' milk. In these cases the point of entrance was probably by the intestines. They had concluded that in some cases at least the tubercle bacilli had passed from the intestine into the mesenteric glands, without leaving any trace of lesion to indicate the point of entrance. Tubercle bacilli are undoubtedly sometimes present in the milk from

tuberculous cattle, especially when the udder is affected. They held that it is not less than criminal to give such milk to delicate children or to children with intestinal catarrh.

DR. METSCHNIKOFF and DR. ROUX presented a joint paper on "The Changes that Take Place Around the Tissues of Tubercle Bacilli." They stated that the process of recovery consisted in the development of concentric layers of dense inflammatory tissue around the bacilli, which eventually led to their absorption, the inflammatory tissue itself finally undergoing a process of calcification.

PROFESSOR EHRLICH gave Koch's views regarding tuberculin. He stated that the results obtained were exceedingly favorable, and that in most of the cases in which he had failed to obtain equally good results it was because he had used too large doses of tuberculin. The principle of cure rested on the local effects that tuberculin exercised on the specifically affected tissues; and the violent inflammatory reaction, passing to necrosis, was neither desirable nor necessary; but, on the contrary, slight and often rapid stimuli would give rise to cicatrization of the tuberculous centers, so that the essence of this method of treatment was to retain as long as possible the specific excitation of the tissues, and not to do away with these, as was the case if large doses were used. Successful results have been obtained by the use of repeated minute doses of tuberculin that were only very gradually increased. It should be specially noted that the pathological signs found as the result of the action of tuberculin were always produced by large doses.

DR. BEHRING read a paper on "Disinfection in the Living Body." He stated that there are four possible ways in which it is conceivable that disinfection within the body may be effected: 1. By killing the disease-producing germs. 2. By hindering their growth. 3. By counteracting their disease-producing properties—pathogenic organisms losing their power to produce poisonous products. 4. By antagonizing the action of or destroying altogether the various toxic products originated by the bacteria.

He detailed the method of conferring upon animals immunity from diphtheria. He held that the curative power of the blood was not dependent upon its living elements, or, at least, is not limited to these. It is rather to be traced to the circumstance that the extravascular blood and the blood-serum of immune animals possess the property of destroying specific poisons without destroying the bacilli. He concluded by stating that perhaps in the general treatment of infectious diseases the same principle may be found to apply as Lister has with such good results applied in the local treatment of infectious wounds—namely, to remove or to render harmless the various causes of disease while leaving the living cells of the tissue in place.

The PRESIDENT (SIR JOSEPH LISTER) said that the phagocyte naturally existed where it could obtain nourishment, and therefore something besides chemical action must be looked for, as there was a great difference between living and dead tissues.

In the Section of the Relations of the Diseases of Animals to those of Man, DR. OSTERTAG discussed "Milk Diseases and the Regulation of Milk Supply." He insisted that the State should see that only pure milk entered the market. The following kinds of milk ought to be excluded: (1) Milk which, without being necessarily prejudicial to health, was peculiar in color, taste, or consistence (nauseous milk); (2) all milk that was prejudicial to health, or which was suspected on good grounds of being so. The milk of animals that had been fed on poisonous fodder, or that have been treated with certain medicaments, and of those suffering from tuberculosis, malignant pustule, cow-pox, aphthæ, or general illness in consequence of some process inducing ulceration, must be regarded as prejudicial to health. In order to guard against these dangers it was requisite (1) that all dairy farms be licensed; (2) that all animals kept for milking be examined by a veterinary surgeon from time to time; (3) that the owners of dairy farms be bound to provide only good undamaged fodder, and to give immediate notice of the illness of any milch cow to the attending veterinary surgeon, and, until he gave leave, not to send the milk of the diseased animal to market; (4) that the business of milking be performed with the most punctilious cleanliness, and that no person suffering from any infectious illness be employed to milk; (5) that the mixed milk obtained by milking be cooled and stored in special rooms, not in living or sleeping-rooms; (6) that it be transported only in suitable vessels; (7) that during the prevalence of aphthæ only boiled milk should be brought into the market, whilst all milk which must be considered nauseous or injurious should be excluded from the provision market; at the outbreak of any epidemic in a house in which dairy farming was carried on, the sale of milk should be forbidden; (8) in obtaining the so-called "milk for children," especially strict regulations ought to be carried out as to the feeding of the milch cows, cleanliness in milking, and the cooling and proper mode of transport of the milk.

PROFESSOR BROWN pointed out that milk was more frequently contaminated by the hands of the milkers and the excreta from the cows than by disease-producing germs, and he gave a short account of the number of different microörganisms which he had detected in milk collected in the most careful manner from healthy cows.

MR. FRANCIS VACHER read a paper on "The Inspection of Meat with Regard to the Prevention of Disease." He proposed: 1. The general provision of public abattoirs. 2. Closing of private slaughter-houses. 3. Licensing and registering of all butchers and their premises. 4. Appointment of competent inspectors of meat. 5. General systematic inspection of animals and meat intended for food. 6. Appointment of competent assessors to sit with magistrates and assist them when necessary in the hearing of cases relating to diseased meat.

DR. W. MARCET read a paper on "The Effects of the Respiration of Carbonic Acid on Man." His conclusions were as follows: 1. That when air containing an excess of CO_2 is breathed, the gas accumulates rapidly in the blood, and under such a condition the phenomenon of nutrition is more or less interfered with, and also that people working in ill-ventilated rooms and buildings should, toward the preservation of their health, sleep in as pure an atmosphere as possible, where they will rid their blood of the carbonic acid absorbed in the daytime. 2. That the effects produced by inhalation of carbonic acid gas depend greatly on the rapidity of the exposure. The sudden inhalation of air containing a

large proportion of the gas may produce rapid insensibility and death, while this same air might have been breathed for some time with a certain degree of impunity had the carbonic acid present been increased gradually. 3. That when life is threatened by the inhalation of carbonic acid there is no reason to despair of artificial respiration so long as the heart is beating; the gas will diffuse rapidly from the blood into the air with which the lungs are inflated, and thus be carried out of the body.

SIR ARTHUR MITCHELL and DR. BUCHAN read a paper on "Influenza and Weather of London." They found a winter maximum of mortality and a summer minimum. During epidemics, deaths from influenza accounted for only about one-seventh of the increase in the mortality. The increase was due to the increased number of deaths from bronchitis, pneumonia and phthisis, diseases of the circulatory system, and enteritis. The heaviest contribution to the death-rate was made by diseases of the respiratory apparatus, though the temperature was high and there were no fogs—evidence that something of an exceptional character was operating to increase the number of deaths from diseases of the respiratory organs.

DR. V. LOGIE read a paper on "The Prophylaxis of Pulmonary Tuberculosis and the Mortality from Phthisis in the Belgian Army." He contended that all men who appeared weak in constitution should be excluded from the army. The effect of crowding, which was the inevitable characteristic of the soldier's habitation, should be neutralized as much as possible. In the future there would have to be separate day and night premises, all access to bedrooms being forbidden after a certain hour —fixed as early as possible—and the rooms thoroughly ventilated until the evening recall. A prize should be given for cleanliness of body, clothes, and room. Clothing should be adapted to the season, so as to diminish the risk of taking cold. The food should be improved and more varied. All administrative formalities should be fulfilled as rapidly as possible, so as to leave in barracks as short a time as possible all men proposed as pensioners on account of consumption, and to isolate them meanwhile more than is done. The medical officer should give special attention to men who seem to have been getting pale and thin for some time. The men should be made to understand as much as possible that if military life strengthens and invigorates the body, it also makes it liable to different diseases, and particularly to consumption, to escape which they must avoid all excess, uncleanliness, etc. The ravages committed in armies by consumption should be made as well known as possible to those whom it concerns..

In the Section of State Hygiene, SIR HENRY THOMPSON inaugurated the discussion on the subject of "The Disposal of the Dead." He said that infectious diseases were highly communicable after as well as before death. Destruction by fire was the only perfect and absolute means of immediate disinfection, of avoiding the contamination of water-supplies, and of preserving the best areas for habitation or the production of food. When cremation could not be performed he urged the burial of persons dying of infectious diseases in capacious coffins filled with quick-lime.

MR. F. SEYMOUR HAYDEN followed with a paper in which he said coffins of any kind were worse than useless, but if employed at all should be of wicker or of the most perishable materials. But cremation he would denounce in the strongest terms as "a direct and potent incentive to crime."

A resolution in favor of cremation as a rational proceeding, especially called for in cases of contagious disease, was carried, with only four dissentients.

In the Section of Demography DR. FELKIN opened the discussion on "The Suitability of Tropical Highlands for European Settlement." He divided the tropics into three vertical zones of climate, each of which had its own peculiarity with regard to the presence or absence of disease. For the permanent residence of Europeans in the tropics a comparatively high altitude was requisite. In the upper or cold zone of the tropics there was a tendency to plethora, and the disorders were of an inflammatory character. Diseases of the respiratory and circulatory organs were relatively common, whilst malaria, yellow fever, cholera, phthisis, dysentery, and hepatitis were almost entirely absent. In the middle zone the seasons exerted an influence, and consequently the presence and prevalence of disease fluctuated. As a whole, however, diseases in this region (having a mean annual temperature of from 41° to 73° F.) were less virulent in character. The lowest or hot zone was the typical tropical disease zone, and here anemia, malaria, diseases of the gastro-intestinal tract, hepatitis, dysentery, diarrhea, beri-beri, dengue, and yellow fever were met with. Typhus fever, plague, goiter, cretinism, and for the most part diseases of the kidneys, were not met with. It was found that an altitude of from six to ten thousand feet was necessary for the British people and North Germans to reside permanently in such districts, and even there the areas for colonization must be carefully selected, and all sanitary precautions taken. Although altitude might give an invigorating climate, there must always be certain elements detracting from its value, namely, the powerful sun, the rarefied air, and the absence of a well-marked summer and winter.

DR. KÖRÖSI read a paper on the "Influence of Parental Age on the Vitality of Children," in which he said that girls should not be married before the age of twenty. The most vigorous children issued from fathers of from thirty to forty years of age, the children of younger and older fathers dying somewhat oftener through uterine causes. It was curious, however, that when the fathers were advanced in life—about sixty years of age or more—the vitality of children seemed to increase anew. As to the influence of the combined age of parents, the results went to prove that old men ought not to marry young women.

MR. F. GALTON read a paper on the subject of "Finger-prints as a Means of Personal Identification," showing the degree of facility by which it was possible to determine whether the duplicate of a submitted set of impressions was or was not contained in a catalogued collection of the finger-prints of different persons, say of criminals. The prints used were those of the bulbs of the ten digits, and in each there were on the average at least twenty distinct points of reference, so that a degree of certainty in identification far exceeding that by any other method could rapidly be obtained.

At the conclusion of the Congress, the degree of Doc-

tor of Laws was conferred by the University of Cambridge upon Professor Brouardel, of France; Professor Conradi, of Italy, and Professor von Fodór, of Hungary.

It was decided to hold the next Congress in 1894 at Budapesth.

SECOND CONGRESS OF TUBERCULOSIS.

Held in Paris from July 27 to August 2, 1891.

(Continued from p. 281.)

DR. CH. LEROUX, of Paris, presented a communication on the "Therapeutic Results Obtained in the Treatment of Tuberculosis in Sanitariums and Hospitals." Of 4692 patients treated from 1869 to 1882, at the Marine Hospital for tuberculous patients, the proportion of cures has been 70.7 per cent. At Banyuls, of 146 patients there were 118 cures, 12 ameliorated, and 6 deaths. At Cannes, of 51 cases of scrofulo-tuberculosis treated in six seasons there were 38 cures, 6 ameliorations, and 2 deaths; in 2 the condition remained stationary. Leroux believes that the result is in direct relation to the length of time spent at the sea-shore. All tuberculous patients cannot adopt the sea-shore treatment. For scrofulo-tuberculosis, the sea-shore treatment is necessary, and Leroux even thinks that it would be desirable to send all debilitated or predisposed subjects to the sea-shore, without waiting for the disease to manifest itself. The contra-indications are painful tuberculosis, aggravated Pott's disease, and lupus, while an absolute contra-indication is pulmonary or visceral tuberculosis.

DR. VIDAL, of Hyères, maintained that short treatments are preferable to long treatments, for after a while a child ceases to derive any benefit from a stay at the sea-shore; he prefers to have them go often and stay but a short time.

DR. DUBRANDY, of Hyères, highly recommended nocturnal ventilation of the patient's room, as an important factor in the treatment of tuberculosis; any system that will permit the entrance of fresh air into the room is a good one, but the currents of air should always be broken by the shutters, which should be closed; small openings left at the upper and lower parts of the window are sufficient for good ventilation. Curtains may be drawn over the windows while these are partially opened; this will avoid draughts.

When there is a strong wind, storm, or much rain, the windows should be tightly closed. When the windows are opened the temperature of the room remains almost unchanged; the variations in the external temperature do not materially influence the temperature of the room, because depression of temperature is compensated for by heat-radiation from the walls, furniture, the temperature of the patient, and above all the temperature of the expired air. 11° C. (51.8° F.) is a safe temperature to be maintained in the sick-room during the winter, and this can readily be accomplished by a small fire.

DR. SABOURIN, of Vernet les Bains, stated that he found that nine-tenths of phthisical patients do much better on dry and cold winter days than during mild weather; at Vernet les Bains patients are all placed in a veranda having a large number of windows, and provided with sofas and woollen covers, with hot bottles for their feet and woollen coverings for their shoulders; but they are not exposed to the rays of the sun. On returning to their rooms the windows, which have been opened all day, are kept partially opened; this mode of life is followed for from three to six months; the treatment has been carried on even when the temperature fell to —6° and —7° C. (19–21° F.). Under such treatment the appetite returns and all the other symptoms are reduced to a minimum.

DR. POIRIER presented a communication on the "Incision of Pulmonary Cavities."

The more recent collected operations of this kind include 29 incisions of tuberculous cavities with excision of ribs, followed in 15 cases by amelioration, in 4 by cure, and in 9 by negative results, and in 1 by an unknown result. The steps in the operation are: With the thermo-cautery make an incision 4 cm. below the sterno-costal notch, 9 cm. long from mid-sternum outward, and parallel with the first intercostal space. Reaching the pleura, if no adhesions are present it is better to wait than to go any further, but if there be a tuberculous pulmonary cavity, adhesions are always present, and through these adhesions, after having incised the pulmonary tissue, it is easy to reach the cavities. As the tuberculous cavities almost always occupy the upper part of the lung, by opening through the first intercostal space the operator finds himself on a level below the cavity; to reach the latter his incision must be carried from below upward and from before backward. To reach cavities in the posterior part of the lung a similar method can be used: the spinal process of the seventh cervical vertebra must be found, and from this point an incision is made along the scapula, the trapezius and rhomboid muscles being cut through, and the first intercostal space reached; though this is much smaller than in front, excision of a rib is not to be recommended, since anteriorly it is quite unnecessary.

PROFESSOR BABES presented a communication on "The Action of Certain Chemical Substances Produced by the Tubercle Bacillus." He conducted his researches on the same lines as those followed by Koch; he endeavored to isolate vaccinal substances by precipitating filtered cultures with alcohol. The precipitates, however, contain many foreign substances, such as albumose derived from the culture-medium. Babes observed a close analogy between bird-tuberculosis and human tuberculosis. Cornil and Babes have considered bird-tuberculosis as not pathogenic in man; for this reason they have employed the bacillus of bird-tuberculosis as a point of departure for their researches. A concentrated glycerin extract or an alcoholic precipitate of cultures of this microbe have the same thermogenic action in guinea-pigs and rabbits as does tuberculin. As to tuberculin, they have found that precipitation with alcohol lowers the thermic and toxic action, which lowering is still more pronounced if the alcoholic precipitate be extracted with chloroform and ether. In this manner, as indicated by Klebs, one obtains for human tuberculosis a substance that is not dangerous, even in large doses; while, on the contrary, the substance soluble in chloroform is often extremely toxic, and even in small doses may kill inoculated guinea-pigs. On the other hand, hens and pigeons are resistant to large quantities of the remedy without a constant rise of temperature.

Of twenty-six hens inoculated with tuberculin, two presented acute bird-tuberculosis.

PROF. CHANTEMESSE, of Paris, and DR. LE DENTU presented an interesting communication on "Spontaneous Tuberculosis in the Dog." They demonstrated anatomical specimens from dogs showing in the liver and kidney lardaceous white masses of the volume of a hazel-nut having all the appearance of sarcomatous and carcinomatous tumors. Inoculations from these masses to dogs and guinea-pigs produced ordinary tuberculosis from a histological point of view. The masses consisted of an agglomeration of living and non-caseous embryonic cells, containing a large number of tubercle bacilli. This observation indicates that the dog does not possess a serum that confers immunity against tuberculosis, and that even outside of laboratory experiments the dog may contract the disease spontaneously, the lesion escaping identification on account of its resemblance to sarcoma and carcinoma.

DR. LELOIR presented a paper on "Experimental Inoculation of Lupus Vulgaris." Two hundred subcutaneous inoculations were made with negative results in guinea-pigs and rabbits. To obtain positive results in the rabbit, it is necessary to make inoculations into the anterior chamber of the eye, while in the guinea-pig it is necessary to make the inoculations into the peritoneal cavity. The result is an unmistakable tuberculosis, which, as it does not develop from subcutaneous inoculation, is not very virulent. This constitutes an important difference between lupus and ordinary tuberculosis, for in the latter, inoculation always gives rise to general tuberculosis. The small number of bacilli found in the lesion of lupus is related to the feeble virulence.

PROF. NOCARD stated that in scrofulosis the diseased tissues contain very few bacilli. Only after its transmission several times from the guinea-pig to the rabbit does the virus become more virulent, so as to be destructive of those animals.

PROF. ARLOING, who has made an especial study of surgical tuberculosis, has found a difference in the results obtained by subcutaneous injections of material from cases of surgical and cases of visceral tuberculosis. He questions differences of quantity, suggesting variations of quality. He believes that there are several varieties of surgical tuberculosis.

PROF. VERNEUIL held that the differences observed in inoculating tuberculous products can be attributed to the quantity of microbes or to the intensity of the poison.

PROF. CORNIL stated that one cannot always maintain that a certain fluid contains no tubercle bacilli, for spores, without bacilli, may be present.

DR. HUMBERT, of Paris, presented a communication on the "Surgical Treatment of Tuberculosis of the Testicle." So soon as the diagnosis is established, an opening is made with the thermo-cautery and all tuberculous structure is removed with the curette. In the great majority of cases castration is followed by a generalization of the tuberculosis, while it is well known that in most cases castration of one testicle for tuberculosis is followed by involvement of the other, necessitating double castration.

PROF. VERNEUIL stated that twenty years ago he condemned castration for tuberculosis of the testicle. Almost always, soon after the operation generalization of the tuberculosis occurs. In eighty cases of a hundred one cannot expect to remove the bacillary focus, for if a rectal examination is made the prostate gland and seminal vesicles will be found to be tuberculous.

DR. PETIT read a note in the name of DR. TUFFIER, giving the history of four cases of tuberculous hydroceles, the liquid of which did not indicate the presence of the tubercle bacillus; its tuberculous nature was established by the development of tuberculosis in an inoculated guinea-pig.

MM. COURMONT and DOR, of Lyon, presented a communication on "Anti-tuberculous Vaccination with Soluble Products Obtained from the Bacillus of Bird-Tuberculosis." Liquid cultures of the bacillus of bird-tuberculosis, filtered through porcelain, were injected subcutaneously, intra-venously, and intra-peritoneally, into guinea-pigs and rabbits. The results obtained, so far as toxic effects are concerned, were negative when the filtered culture had been previously attenuated; toxic effects developed when the filtered culture was left virulent. In about 75 per cent. of inoculated rabbits infection was postponed, and instead of observing rapid death and the usual lesions, only well-formed tubercles were found; in about 25 per cent. of cases the influence of vaccination was still more apparent, animals surviving enormous doses of virus, those sacrificed several months after the injection presenting not a trace of tuberculous infection. In four cases rabbits that had resisted bird-tuberculosis were inoculated seven months later with a very virulent form of human tuberculosis, and presented no sign of the disease. Guinea-pigs can only be satisfactorily vaccinated by intra-venous inoculation, but, on the other hand, they are much more sensitive to the toxic action of the vaccine employed.

DR. MARFAN, of Paris, presented a communication upon "New Researches on the Gastric Disturbances and Lesions Encountered in Pulmonary Tuberculosis." He makes three classes of the disease: 1st, the common dyspepsia of phthisical patients; 2, the initial forms of this dyspepsia; 3, the terminal gastritis.

Under the head of common dyspepsia we find a series of disturbances, such as a diminution in the appetite, fetid or acid gastric eructations following the taking of food; gastric cough, from food coming in contact with the gastric mucous membrane, and finally vomiting; the vomiting and gastric cough are attributed to abnormal irritability of the pneumogastric nerve. The other gastric symptoms are dependent upon enfeeblement of the muscular coats of the stomach and dilatation of the organ; or to a diluted gastric juice, with or without putrid fermentations. The weakened condition of the motor power and of the gastric juice is ascribed to a poisoning of the walls of the stomach by tuberculous toxines; hence, phthisical dyspepsia is a toxic dyspepsia. In most cases the ordinary dyspepsia appears at once and develops with the phenomenon that announces a pulmonary localization soon afterward. In other cases the appearance of the dyspepsia is preceded by gastric symptoms of different origin, clinically characterized by more or less intense gastralgia, and chemically by a hyper-secretion and hyper-acidity of the gastric juice. This condition is often observed before the development of the tuberculous lesion and corresponds to what has been called pre-tuberculous dyspepsia. This is always accompanied by gastric dilatation, but is inconstant and

does not last long after pulmonary tuberculosis has really manifested itself, as it is replaced by a state of hypo-secretion and hypo-acidity of the common form of dyspepsia.

During the last stage of the disease, when large cavities are found in the lungs, new symptoms related to the digestive tract appear, indicating the development of gastritis. The phenomena that characterize this particular gastritis are: a bright-red tongue, of glazed appearance, deprived of its superficial layer of epithelium, as observed after scarlet fever; in addition, profound anorexia is present, and persistent diarrhea dependent upon the coexistence of intestinal lesions. This gastritis is probably due to a tuberculous intoxication, in addition to toxic infection so frequently observed in the last stages of pulmonary phthisis.

It is difficult to formulate the treatment to be recommended for such patients. The vomiting necessitates the use of the local anesthetics, among which may be placed creasote in dilute solution, cocaine, menthol, carbolic acid, or chloroform-water.

CORRESPONDENCE.

PARIS.

While at Salzburg I was struck by the fact of the large number of people suffering with goiter, those affected being chiefly women. I believe it has been ascertained that in a considerable number of cases of removal of the enlarged thyroid, mental disease follows, and hence operators of most experience are trying whether this danger may be averted by employing only partial extirpation. The question naturally suggests itself whether removal of the uterine appendages may not also be followed in many cases by similar disease. Certainly, if collected, the statistics of these operations are sufficiently numerous to give light upon this subject. Auvard, the only professional acquaintance that I have met in Paris—the few others that I know being absent upon their summer vacation—tells me that this operation is too frequently done in that city, and I think a similar belief as to its being too often done in our own country prevails with the majority of the profession in the United States. In reply to my question as to operations for pyosalpinx being so frequent in Paris, so few in Germany—in the latter I have seen but one in more than thirty abdominal sections—he stated that both septic and specific inflammation of the tubes were much more common in France than in Germany. The reason for the greater frequency of the latter was clandestine prostitution and of the former the common neglect of proper antiseptic precautions by the French midwife, while these were strictly observed by the German.

Auvard showed me two operations—one an amputation of the vaginal cervix for retroflexion (the uterus was hypertrophied, and involution would follow, with probable restoration of the organ to its normal position); the other dilatation, curetting, and application of an iron solution for a bleeding fibroid. The last operation was the same that I had previously seen Winckel do, and illustrated a corresponding, wise conservatism. The lesson is plain: Never resort to a grave operation until milder means have proved useless. For vaginal packing he employs a gauze prepared with salol, spermaceti, and glycerin; certainly, it makes an admirable tampon, the best I have seen.

In two months his work on *Diseases of Women* will be issued, and those familiar with his treatise upon obstetrics as well as with his volumes of obstetric contributions, will look forward with pleasure to its appearance. Pozzi's work on the same subject issued last year was too large, too diffuse, and its most valuable portions seem to me to be more the teaching of Berlin than that of Paris.

After the operation Dr. Auvard was kind enough to take me to Salpêtrière, at which it was expected Térillon's assistant (Térillon himself being absent from the city) would do a hysterectomy for a rapidly-growing supposed myoma; abdominal section had been done some time before for, I believe, an ovarian tumor. The moment the abdominal cavity was opened considerable bloody serum escaped, and then there was quite a free hemorrhage. It was found impossible to remove the growth, the malignancy of which could not be doubted, and so the wound was closed, considerable iodoform gauze being pressed down toward the bleeding part and a portion of it left projecting externally, drainage thus being certainly secured and possible hemostasis promoted. I think the patient died within twenty-four hours. Following this the same operator performed a colotomy. The patient had a malignant tumor of the ovary; this had been removed, but the disease reappeared, and obstruction of the bowel followed, for which an opening had been made in the descending colon. The disease still extending, it was thought advisable to open the transverse colon, and the preparation for such opening I witnessed—that is, the abdominal incision and stitching the intestine to the abdominal wall, the opening of the intestine being deferred until adhesion had occurred. The point of greatest interest to me in the operation was that the administration of an anesthetic was believed to be contra-indicated, lest the possible straining and vomiting resulting therefrom would rupture adhesions or previous abdominal incisions; the sensibility was lessened, but by no means abolished, by the hypodermatic injection of a two per cent. solution of cocaine at four different points along the line to be incised. While the incision caused only slight suffering, the suturing of the intestine to the abdominal wall caused considerable, but not when the needle was passed through the walls of the bowel—only when the needle passed through the parietes of the abdomen.

Dr. James Henry Bennet, one of the pioneers in the local treatment of uterine diseases, has just passed away, at the age of seventy-five. So too, comparatively recently, two famous German teachers, whose contributions to obstetrics and gynecology were more important—Scanzoni, who was seventy years old, and Braun—have gone over to the majority. Great as these men were, it is vain to speak of their loss as irreparable. As the old Italian proverb has it, "With or without the cock crowing, God makes the day;" and so medicine goes on independently of the departure of individuals.

I found, when in Berlin, considerable interest in the question as to who was to be Braun's successor. When a vacancy occurs in any of the medical schools of the German Universities, the faculty present three names to

the Minister of Public Instruction, who makes the selection. Schauta, Pawlik—the third I cannot now recall—were the names proposed for Braun's place. When in Munich I learned that Schauta had been chosen, and I believe the choice is generally commended, though many would have been delighted to see that brilliant teacher and operator and genial gentleman, Pawlik, successful.

The question has suggested itself whether a somewhat similar plan might not be wisely employed in filling vacancies in our own medical schools.

But, returning from this digression, the best aseptic operating table I have ever seen was that employed by Auvard, and several similar ones by the same manufacturer, the celebrated surgical instrument-maker of Paris, Mathieu. These tables are made of steel and German silver, and are nickel-plated. Considering their material, they are not very heavy. One of the forms that Mathieu makes can be folded up and thus readily taken to the house in which an operation is to be done; another is so constructed that it may be made to revolve vertically through about one-fourth of a circle, and thus permit of instant lowering of the head in case of threatened danger from anesthesia, or, on the other hand, an elevation of the hips, so that really the Trendelenburg position is given.

By the way, the watchfulness against the danger just mentioned was shown in all of several cases that I have seen here, by the anesthetizer applying forceps to the tongue, the instrument remaining, causing partial extrusion, until the operation is over; it is hardly necessary to state that on the Continent chloroform seems the only anesthetic used.

Mathieu told me that he intended going to the Chicago Exposition and making an exhibit of instruments. I am confident that the profession will take great interest in such an exhibit. Incidentally it may be stated that the table to which I have referred costs six hundred francs ($120), irrespective of form; there are at least half a dozen patterns. It would be a good thing if every operating hospital in our country had one; there is nothing better for securing perfect cleanliness.

In regard to foreign professional visitors to Chicago, probably the number will be greater than most anticipate. More than one gentleman in Berlin told me that he was coming. It must be remembered that I met very few physicians there, except those especially devoted to obstetrics and diseases of women. Dr. Auvard is coming, and, like others, he is desirous of making his visit at the time when some of our national medical societies shall be in session, in order that he may meet as many of the profession, or at least as many of those that are engaged in his special department, as possible. Ought not the profession of the United States to take measures to secure the realization of such desire?

Herewith I conclude these hurriedly-written letters from abroad. During my visit I have seen much that was interesting, instructive, and useful to me. If through my eyes others are enabled to see anything that in even a slight degree may be useful, my labor is not in vain.

The visitor to the Mozart Museum in Salzburg will find in a glass case amid a number of the relics of the great musical composer, such as letters, jewels, miniatures painted on ivory, etc., a paper marked, in the printing of more than a century ago, "Court Plaister." This Mozart got when visiting England some years before 1800. It may be that this letter will be no more among the treasures of THE MEDICAL NEWS than that paper of "court plaister" is in the Mozart collection; but still the one, like the other, may help to close a gap, and none will gape at its close. T. P.

SELF-RETAINING PALATE RETRACTOR.

To the Editor of THE MEDICAL NEWS,

SIR: Permit me to say that the illustration of the palate retractor, published in your issue of September 5th, utterly failed to convey a proper idea of *my* instrument. By some misconception the wood-cut furnished you by my instrument-maker, and which I did not see, was not a representation of my modification, as may readily be discerned by a perusal of the article. I hope at an early day to have an accurate illustration of the instrument reproduced. T. H. WEAGLY.

MARION, PA.

NEWS ITEMS.

The American Neurological Association will hold its seventeenth annual meeting at Washington, D. C., September 22, 23, and 24, 1891.

The following program has been formulated:

Tuesday, September 22d. Address by the President, Dr. Wharton Sinkler, of Philadelphia.

A Case of Acute Spinal Paralysis: Death on the Twelfth Day, with the Account of the Microscopic Examination made by Dr. C. W. Burr, by Dr. Wharton Sinkler, of Philadelphia.

Polio-myelitis Acuta Adultorum, by Dr. William C. Kraus, of Buffalo.

A Contribution to the Therapeutics of Polio-myelitis, by Dr. V. P. Gibney, of New York.

Syphilis of the Spinal Cord, by Dr. Philip Zenner, of Cincinnati.

The Virile Reflex in Relation to Clinical and Forensic Neurology, by Dr. C. C. Hughes, of St. Louis.

Lead-poisoning with Special Reference to the Spinal Cord and to Peripheral Nerve Lesions, by Dr. E. D. Fisher, of New York.

A Case of Tumor of the Cerebellum in which Trephining was Done for the Relief of Pressure, by Dr. Philip Coombs Knapp, of Boston.

During the Meeting, Dr. William C. Kraus, of Buffalo, will exhibit a Neuro-topographical Bust.

Wednesday, September 23d. Gunshot Wound of the Left Cuneus with Complete Right Homonymous Hemianopsia, by Dr. J. T. Eskridge, of Denver.

A Case of Trephining and Excision of the Cortex for Jacksonian Epilepsy, by Dr. W. W. Keen and Dr. Charles K. Mills, of Philadelphia.

Five Recent Cases of Brain Surgery, by Dr. William A. Hammond, of Washington.

Astasia-abasia, by Dr. Philip Coombs Knapp, of Boston.

Tuberculous Infection of the Central Nervous System, by Dr. B. Sachs, of New York.

Subcortical Hemorrhagic Cyst Beneath the Arm and Leg Areas, with Remarks on the Diagnosis of Lesions

of the Motor Subcortex, by Dr. C. K. Mills, of Philadelphia.

The Diagnosis of Certain Forms of Intra-cranial Syphilis, by Dr. Landon Carter Gray, of New York.

1. A Case of Tumor of the Mesencephalon with Exhibition of the Brain; 2. A Case of Tumor of the Brain with Focal Epilepsy, by Dr. James Hendrie Lloyd, of Philadelphia.

The Electro-physiology of Reflexes, with the Description of a Hitherto Unknown Localized Physiological Phenomenon, by Dr. G. W. Jacoby, of New York.

Thursday, September 24th. Triple Personality, by Dr. Irving C. Rosse, of Washington.

A Case of Porencephalus in which Trephining was Done for the Relief of Local Symptoms. Death from Scarlet Fever. Exhibition of the Specimen, by Dr. De Forrest Willard and Dr. James Hendrie Lloyd, of Philadelphia.

Double Athetosis, by Dr. William Osler, of Baltimore.

1. A Case of Thomsen's Disease; 2. Removal of a Neuroma, Followed by Disappearance of Local Anesthesia of Fourteen Years' Standing, by Dr. G. L. Walton, of Boston.

Facial Hemi-hypertrophy, by Dr. William A. Hammond, of Washington, D. C.

Lithemia Considered in its Relation to Nervous Phenomena, by Dr. C. Eugene Riggs, of St. Paul.

Friedreich's Disease: Its Relation to Conducting Paths in the Cord, by Dr. David Inglis, of Detroit.

Fracture of the Eleventh Costal Spine, Followed by Injury of the Spinal and Sympathetic Nerve-supply of the Bowel in the Region of the Ileo-cecal Valve. Intestinal Hemorrhage and Death on the Seventh Day, by Dr. J. T. Eskridge, of Denver.

A Case of Unilateral Paralysis of the Lips, Tongue, and Pharynx, with the Presentation of Specimens, by Dr. G. M. Hammond, of New York.

The Fourth Annual Session of the Association of American Anatomists will be held at Washington, September 23, 24, and 25, 1891.

The following program has been arranged:

Wednesday, September 23d. The Fundamental Principles of Anatomical Nomenclature, by Dr. Burt G. Wilder, of Cornell University.

The Systematic Use of the Eye in Teaching Anatomy; Accompanied by a Demonstration of a Brain Model, by Dr. William P. Carr, of Washington.

Some Impressions on the Teaching of Anatomy to Medical Students, by Dr. Harrison Allen, of Philadelphia. Discussion to be opened by Dr. Dwight, followed by Dr. Baker.

The Fossa Prenasalis, by Dr. Thomas Dwight, of Harvard University.

Notes on the Hearts of Certain Animals, by Dr. Ida Hyde, of Chicago. To be read by Dr. S. V. Clevenger, of Chicago.

Thursday, September 24th. Recent Fissural Diagrams, by Dr. Burt G. Wilder, of Cornell University.

The Arrangement of the Supra-cerebral Veins in Man, as bearing on Hill's Theory of Developmental Rotation of the Brain, by Dr. William Browning, of Brooklyn.

Morphological Importance of the Membranous or Other Thin Portions of the Parietes of the Encephalic Cavities, by Dr. Burt G. Wilder, of Cornell University.

The Alleged Lateral Orifices, Communications of the Fourth Ventricle with the Subarachnoid Space: Are They Natural? by Dr. Burt G. Wilder, of Cornell University. Being a reply to part of Dr. F. W. Langdon's paper, "Homology of the Cerebro-spinal Arachnoid with the other Serous Membranes."

The Structure of Basis and Cement Substance, by Dr. Charles Heitzmann, of New York.

Serial Fetal Sections: Specimens and Remarks, by Dr. W. W. Gray, of Washington.

The Teeth of the Chiroptera, by Dr. Harrison Allen, of Philadelphia.

Specimens of Supernumerary Digits in Man and the Pig, by Dr. F. J. Shepherd, of Montreal.

The Relative Frequency of the Psoas Parvus Muscle in the Colored Race, by Dr. E. A. Balloch, of Washington.

Friday, September 25th. Certain Modifications in Plant Morphology, Produced by External Conditions, by Dr. W. P. Wilson, of Philadelphia.

Comparative Osteology of the North American Pygopodes, by Dr. R. W. Shufeldt, of Washington.

The Supra-condyloid Process in Man, by Dr. D. S. Lamb, of Washington.

Platycnemic Tibias, by Dr. Frank Baker, of Washington.

History of Anatomy as a Science, by Dr. G. W. West, of Washington.

Congenital Union of the Quadrate Jugal to the Mandible in a Cockatoo: Specimen and Remarks, by Mr. Fred. A. Lucas, of Washington.

Homologies of the Principal Bones, by Mr. Fred. A. Lucas, of Washington.

Several other papers are expected; one from Prof E. D. Cope, of Philadelphia; another from Dr. T. N. Gill, of Washington. Prof. D. J. Cunningham, of Dublin, will be present, and is expected to read a paper or make remarks on some subject.

The American Pediatric Society will hold its third annual meeting at Washington, September 22, 23, 24, and 25, 1891.

TUESDAY, SEPTEMBER 22, 8 P.M.

Address of the President.

How to Prevent Complications and Sequelæ in Scarlet Fever, by Dr. J. Lewis Smith, of New York.

Discussion on the Diagnosis of Pneumonia in Infancy and Early Childhood.

(1) The most diagnostic symptoms of the Early Stage of Lobar Pneumonia and the differential diagnosis from such diseases as Meningitis, Malaria, Scarlet Fever, etc., by Dr. T. S. Latimer, of Baltimore.

(2) The diagnosis of Consolidation of the Lung from Effusion (serous or purulent) and the differential diagnosis between Lobar Pneumonia and Broncho-pneumonia, by Dr. F. Forchheimer, of Cincinnati.

(3) The diagnosis of Broncho-pneumonia (acute and chronic) from Tuberculosis, by Dr. William Osler, of Baltimore.

(4) The diagnosis of Broncho-pneumonia from Bronchitis, also the Temperature Range in Acute Pneumonia,

both Lobular and Lobar, by Dr. L. Emmett Holt, of New York.

(5) Remarks by Dr. A. Jacobi, of New York, and by Dr. W. P. Northrup, of New York.

(6) General Discussion.

WEDNESDAY, SEPTEMBER 23, 11 A.M.–2 P.M.

Demonstrations.

(1) A Specimen of Congenital Heart Disease, by Dr. William Osler, of Baltimore.

Manifestations of "La Grippe" in Children, by Dr. Charles Warrington Earle, of Chicago.

The Treatment of Laryngeal Diphtheria by Calomel Sublimations, by Dr. Dillon Brown, of New York.

Further Report on Submembranous Local Treatment in Pharyngeal Diphtheria, by Dr. A. Seibert, of New York.

A Case of Ulcerative Catarrhal Dysentery, by Dr. W. D. Booker, of Baltimore.

Stricture of the Esophagus occurring in Children, with Report of a Case, by Dr. F. E. Waxham, of Chicago.

A Case of Pulmonary Abscess—operation and recovery, with Remarks, by Dr. Francis Huber, of New York.

THURSDAY, SEPTEMBER 24, 9 A.M.–2 P.M.

Demonstrations.

(1) Exhibition of Laryngeal Tubes for the Performance of Forcible Respiration, by Dr. J. O'Dwyer, of New York.

A Study of Fifty Cases of Chorea, by Dr. Samuel S. Adams, of Washington.

A Study of One Hundred and Forty Cases of Heart Disease in Children, (by invitation) by Dr. Floyd M. Crandall, of New York.

Dysentery in a Boy of Eleven Years—presence of Amœba Coli, by Dr. H. Lafleur, of Baltimore.

Scorbutus in Children, by Dr. W. P. Northrup, of New York.

Chronic Nephritis in Children, by Dr. Henry Jackson, of Boston.

Two Cases of Acute Primary Nephritis in Infants, by Dr. L. Emmett Holt, of New York.

Scarlatinal Nephritis in Children, by Dr. J. Lewis Smith, of New York.

The Application of Gavage in the Treatment of Uncontrollable Vomiting in Infants (by invitation), by Dr. Charles G. Kerley, of New York.

The Association of Congenital Wry-neck and Facial Hemiatrophy, by Dr. William Osler, of Baltimore.

Tuberculous Ostitis of the Hip, originating in Colorado, by Dr. John M. Keating, of Philadelphia.

A Case of Slow Heart in an Infant terminating in Fatal Syncope, by Dr. A. D. Blackader, of Montreal.

FRIDAY, SEPTEMBER 25, 9 A.M.–1 P.M.

The Etiology of Stomatitis Aphthosa, by Dr. F. Forchheimer, of Cincinnati.

Perityphlitis in the Young, by Dr. J. Henry Fruitnight, of New York.

Intussusception, by Dr. L. Emmett Holt, of New York.

A Case of Congenital Cretinism, by Dr. C. W. Townsend, of Boston.

A Further Contribution to Cirrhosis of the Liver in Childhood, with Post-mortem Notes and Microscopic Studies, by Dr. W. A. Edwards, of San Diego, California, and Dr. W. M. Gray, Microscopist, Army Medical Museum, Washington, D. C.

Female Physicians in Portugal.—Last year a woman was for the first time admitted to the medical profession in Portugal. This year four others have taken medical degrees.

BOOKS AND PAMPHLETS RECEIVED.

Index Catalogue of the Library of the Surgeon-General's Office, U. S. A. Authors and Subjects—Vol. XII.: *Reger–Shuttleworth*. Washington: Government Printing Office, 1891.

Regional Anatomy in its Relation to Medicine and Surgery. By George McClellan, M.D. Illustrated from photographs, taken by the author, of his own dissections, expressly designed and prepared for this work, and colored by him after Nature. In two volumes. Vol. I. Philadelphia: J. B. Lippincott Company, 1891.

Addresses, Papers, and Discussions in the Section of Obstetrics and Diseases of Women at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., March 5–8, 1891. Chicago: Printed at the Office of the Association, 1891.

Ninth Annual Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine, 1891.

With What Shall We Vaccinate? By Samuel Wolfe, M.D. Reprint.

Therapeutics of Diphtheria. By Dr. Joseph Burghardt. Translation, 1891.

Chorea in Relation to Climate, Especially the Climate of Colorado. By J. T. Eskridge, M.D. Reprint, 1891.

Laparo-hysterorrhaphy as a Means of Cure of Cases of Extreme Prolapse, or Retro-displacements of the Uterus. By W. J. Asdale, M.D. Reprint, 1891.

Contributions from the Chemical Laboratory of the Woman's Medical College of Pennsylvania. By Emma L. Billstein, Class of 1892.

The Influence of Alcohol on Proteid Metabolism. By R. H. Chittenden. Reprint, 1891.

A Study of Aërotherapeutics. By Samuel S. Wallian, A.M., M.D. Reprint, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 8 TO SEPTEMBER 14, 1891.

HUNTINGTON, DAVID L., *Surgeon*.—The leave of absence granted is extended to include September 30, 1891.

HEIZMANN, CHARLES L., *Surgeon*.—Is relieved from duty at Fort Clark, Texas, and ordered to Fort Douglas, Utah Territory, relieving William D. Wolverton, Surgeon, who, upon being relieved, will proceed to Fort Schuyler, New York, and report for duty at that station.

DAVID L HUNTINGTON, *Surgeon;* HENRY MCELDERRY, *Surgeon;* WALTER REED, *Assistant Surgeon;* and CHARLES M. GANDY, *Assistant Surgeon*, are appointed members of a Board of Medical Officers, to meet in New York City, October 1, 1891, for Examination of Candidates for Admission into the Medical Corps of the Army.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 12, 1891.

WELLS, HOWARD, *Surgeon*.—Ordered to special duty in fitting out the new Naval Hospital at Portsmouth, N. H.

HALL, JOHN H., *Surgeon*.—Ordered before the Retiring Board, September 19th.

ROSS, JOHN W., *Surgeon*.—Ordered, in connection with present duty, as a member of the Board on Labor Employment.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

ON THE RESULTS OF TREATMENT OF SIMPLE FRACTURE OF THE SHAFT OF THE FEMUR.[1]

BY STEPHEN SMITH, M.D.,
OF NEW YORK.

AT the last meeting of the American Surgical Association, the following preamble and resolution were adopted:

"WHEREAS, In the treatment of fractures of the shaft of the femur the question often arises as to what is a satisfactory result in a given case; therefore, be it

"*Resolved*, That a committee be appointed by the President to report at the next meeting of the Association what in their judgment, under the methods of treatment now employed, should be considered as satisfactory results."

The following committee was appointed: Dr. Stephen Smith, of New York; Dr. D. Hayes Agnew, of Philadelphia; Dr. David W. Cheever, of Boston; Dr. D. W. Yandell, of Louisville; Dr. Charles T. Parkes, of Chicago; Dr. P. S. Conner, of Cincinnati; Dr. Charles B. Nancrede, of Ann Arbor; and Dr. Hunter McGuire, of Richmond.

The question referred to your committee has an important bearing upon the jurisprudence of surgical practice. One of the most frequent causes of prosecution of surgeons is the alleged mal-treatment of cases of fracture of the femur. Unfortunately, in the trial of these suits the testimony of surgeons appearing as witnesses has too often been contradictory. The effect of this want of uniformity of opinion among surgeons of equal opportunities for experience and observation has usually proved disastrous to the just determination of the question at issue. Courts have been led to regard expert testimony as only confusing, while juries have rejected it altogether.

It would greatly subserve the ends of justice in this class of cases if there were that harmony of views among surgeons, on the special subjects of litigation, that would secure the confidence of both courts and juries. And this consensus of opinion would undoubtedly have the greater weight if it was in the form of a precise statement, deliberately made, and authoritatively endorsed by a body organized like this Association. In this view your committee has endeavored to obtain the experience of individual members for the purpose of formulating conclusions that they may submit for adoption by the Association. Accordingly the committee issued the following circular to members, viz.:

"What should be considered as a satisfactory result (other than perfect union) in the treatment of a simple fracture of the shaft of the femur?"

The question was so framed as to elicit the answer that would be required in court. Thirty-four members replied, and their answers have been tabulated for convenience of reference. Although there are noticeable in these replies certain differences of opinion on the several points raised, these differences are by no means so great and irreconcilable as not to admit of being embodied in a general statement designed to harmonize and unite them for future reference. The committee has accordingly briefly reviewed the several questions raised, and has endeavored to secure a common ground on which the Association can take its position, and on which members can individually stand before the courts.

1. *Bony union.* The necessity of firm bony union as a result of the treatment of a fracture does not admit of discussion. The failure to secure this result, so frequent in fractures of the shaft of the femur, raises questions in each individual case quite foreign to the objects of this report. It is pertinent, however, to state that the amount of callus should not be taken as a criterion of the success of treatment. It may be so slight as not to admit of detection, or so abundant as to form a well-marked mass, and yet the function of the limb be completely restored. The practical question is as to its firmness.

2. *Relation of the long axes of the fragments.* It is the aim of the surgeon to restore the normal relation of the long axes of the fragments in order to prevent angular deformity. This he endeavors to accomplish by the exact apposition of the fractured surfaces, and by securing the normal curves of the shaft. But he finds that in the vast majority of instances he cannot effect his purpose. The exact apposition of the fractured surfaces is generally impossible; nor can the normal long axial line be restored with mathematical precision. Overriding of the fragments will, as a rule, occur in spite of the most accurately adapted appliances and the most assiduous care. Nor does this failure to secure perfectly accurate adjustment of the fragments, both as to the frac-

[1] Being the report of a committee read at the meeting of the American Surgical Association held at Washington, D. C., Sept. 1891.

tured surfaces and as to the long axis, imply loss or even impairment of function. For, if parallelism of the long axes of the two fragments is secured, notwithstanding the ordinary overriding of the fractured surfaces, the gait of the person and the strength of the limb need not be impaired by such union. We may conclude, therefore, that a satisfactory result is obtained when the long axis of the lower fragment is continuous with the line of, or with a line nearly parallel with the axis of the upper fragment, or, in other words, when there is no perceptible angular deformity at the seat of fracture.

3. *Correspondence of the anterior surfaces of the fragments.* On the correspondence of the anterior surfaces of the fragments depends the position of the foot. If these surfaces are on the same plane the foot will have its normal outward inclination from the center of the body, and in proportion as the anterior surface of the lower fragment deviates from the plane of the upper fragment will the foot incline from its normal position. If the deviation outward is considerable there will be permanent lameness of the patient. The result of treatment, therefore, to be satisfactory, requires that the anterior surfaces of the fragments shall be on the same plane, or, in other words, that the normal outward inclination of the foot shall be preserved.

4. *Length of limb.* The length of the injured limb when compared with its fellow was formerly regarded as the test of success of treatment. Hence, in the final estimate of the result the length of the fractured limb was carefully ascertained and compared with the uninjured limb, and the difference noted. The records of all past time show that shortening of the fractured limb was the universal rule, whatever the method of treatment pursued, and the question to be determined in each case was simply as to the degree of such shortening existing. The recent discovery of the natural discrepancy in the lengths of the lower limbs has considerably modified our estimate of this test of treatment. It now appears that a difference in the length of the lower limbs, once considered an evidence of unsuccessful treatment, is after all not incompatible with a perfectly natural formation of these limbs. It is established by careful measurement that 90 per cent. of healthy, uninjured persons have lower limbs of unequal lengths. This fact proves that shortening of one lower limb, as compared with the other, is the normal development of the skeleton of man. But the difficulty of estimating the value of shortening as a test is still further enhanced by the fact that one limb, as the left, is not invariably longer than the other, or the right. It appears that in 35.8 per cent. the right limb is the longer, while in 54.3 per cent. the left is the longer. It is, therefore, manifestly impossible in any case to determine the exact result of treatment so far as regards shortening. It might happen, if the limbs were found of equal length, that the naturally longer limb was fractured, and only the usual amount of shortening occurred, which equalized their length; or, if the shortening was found to be considerable, as an inch and a half, the difference might be explained thus: the fractured femur was originally the shorter, and the usual, unpreventable shortening occurring during treatment has been added to that already existing; or, again, we could explain those very rare cases in which the fractured limb is alleged to be found the longer after treatment, by assuming that it was previously much the longer, and that the shortening has not been sufficient to equalize the lengths of the two.

In view of these facts we must conclude that, within given limits of shortening, measurement of the limbs affords no accurate or reliable guide as to the success or failure of treatment. Those given limits have never been fixed by authorities, and even had they been agreed upon previously to the discovery of the natural difference in the lengths of the limbs, they would have had no substantial foundation. With these new facts to aid us, we are in a position to create a much more just standard, for it will have a scientific basis. In the first place, it must be accepted as a legitimate conclusion that if the amount of shortening does not exceed the average natural difference in the lengths of the limbs, viz., about one-half an inch, the result will be in accordance with the laws of Nature in the conformation of the lower extremities. In other words, such a result ought to be considered *perfect*. Secondly, if the shortening does not exceed the extreme limit of difference in the lengths of natural limbs, viz., about one inch, the result should be regarded as satisfactory. Thirdly, an unsatisfactory result, as regards shortening, exists only when the degree of shortening exceeds the greatest difference of natural limbs, viz., one inch.

5. *Lameness.* Lameness, limping, or a halt, after recovery from fracture of the femur, is a symptom of very variable significance. Some patients will have a limp in their gait with but one-fourth of an inch shortening, while others will not limp who have a half or even an inch of shortening. It is an important fact—bearing upon the question of how far shortening of the limb after fracture of the thigh, with lameness, is to be taken as proof of disability—that people who have, normally, one leg longer than the other do not limp, even when the difference has been found to be fully one inch. Undoubtedly, this failure of persons to recognize the natural discrepancy in the lengths of their lower extremities is due to the habit, early acquired, of adjusting the pelvis to neutralize the defect, with a slight compensatory curvature of the spine.

NAME OF SURGEON.	OPINION.	REMARKS.
W. W. Keen, Prof. Prin. Surg. and Clin. Surg. Jeff. Med. Col., Phila., Pa.	Perfect union with not over half or three-quarters of an inch of shortening, enabling the patient to walk without limping.	
John Ashhurst, Jr., Prof Surg. Med. Dept. Univ. Pa., Phila., Pa.	In the case of an adult: A useful limb without obvious limp or deformity, and with shortening of not more than one inch.	I have never seen, either in my own practice or in that of other surgeons, recovery without slight shortening (in the adult), though this shortening may be as little as from a quarter to half an inch.
O. H. Allis, Surg. Presb. and Jeff. Med. Col. Hosp., Phila., Pa.	Only such a result as permits the patient to assume his customary duties.	Shortening to the extent of an inch or more is not incompatible with great strength and usefulness. Outward angular deformity in the upper and middle thirds, even with slight shortening, results in feeble legs, and necessitates a cane or crutch.
N. Senn, Prof. Surg. Rush Med. Col., Chicago, Ill.	Proper axis of bone, useful joints, and perhaps from half an inch to an inch and a half of shortening.	
Roswell Park, Prof. Surg. Med. Dept. Univ. Buffalo, Buffalo, N. Y.	A useful limb with not to exceed half or five-eighths of an inch shortening, with joints which at the end of from ten to twelve weeks after leaving bed respond to all calls made upon them, and muscles which do the same.	
D. Hayes Agnew, Hon. Prof. Clin. Surg. Med. Dept. Univ. of Pa.	Union with shortening not exceeding three-quarters of an inch, with the normal curves of the bone little, if any, exaggerated.	Union after such a fracture, in the adult, without shortening, never occurs. The changes that take place at the seat of injury render such a result impossible. There is always an appreciable loss of osseous tissue at the ends of the broken fragments, corresponding to the extent of the blocking up of the vessels of the Haversian canals by coagula. There are cases of delayed union, from causes often inexplicable, and which, in order to renew the work of repair, sometimes require the rubbing together or attrition of the fragments. In cases of this nature the degree of shortening, after consolidation, will rarely be less than one inch, in consequence of the increased absorption of bone.
John Homans, Surg. Mass. Gen. Hosp., Boston, Mass.	Union in the line of the proper axis of the femur with a shortening of not more than three-quarters of an inch.	
Geo. W. Gay, Surg. Boston City Hosp., Boston, Mass.	In adults bony union with no great lateral deformity, and *not over one inch shortening*.	I never expect less than three-quarters of an inch shortening, and have never seen a case without some shortening. Under ten years of age the result is satisfactory if the shortening does not exceed three-quarters of an inch.
R. A. Kinlock, Prof. Surg. Med. Col. State of South Carolina, Charleston, S. C.	There should be no obvious deformity; the physiological functions of the limb, including all of the articulations, should be preserved, and the shortening should not be greater than half an inch.	
Christopher Johnston, Emeritus Prof. Surg. Univ. of Maryland, Baltimore, Md.	The best result is not a perfect union only, but a perfect coaptation of the fractured ends of the bone.	This coaptation, considering the mass of flesh surrounding the fractured bone, is very difficult indeed. The shape of the bone, itself arched, making a more decided arch with the femoral neck, is opposed to a straightening of the whole femur. A gentle *curve* of this bone under treatment in fracture, and the following by the lower fragment of the natural rotators outward of the upper iliacus and psoas magnus and the adductors, 1, 2, and 3, which all turn and keep outward the upper fragment above a point at which the fracture may lie, are well to bear in mind. If extension be employed the above precepts of curves must be kept in view, and shortening may be avoided, and continuity, even, be best promoted.
L. C. Lane, Prof. Surg. Cooper Med. Col., San Francisco, Cal.	Recovery with length of limb equal to what existed prior to the fracture, with some deviation from normal outline.	This can be obtained by traction and counter-traction in the extended position, traction to be made by weight, pulley, and rubber adhesive plaster, and counter-traction by the patient's body. The traction force will vary from ten to thirty pounds according to the age and muscular resistance of the subject, accurate adjustment and restitution to anatomical form being secured while the patient is deeply anesthetized.
John H. Packard, Surg. Penn. and St. Joseph's Hospitals, Philadelphia, Pa.	Perhaps it may be said, as the nearest approach to a definite standard, that in an ordinary case of fracture of the shaft of the femur, there should not be more than one-half or three-quarters of an inch of shortening to be detected by measurement. I should look much more at the ultimate effect upon the gait of the patient; I say *ultimate* because so often a degree of shortening, which at first causes a decided limp, is overcome later by a slight compensatory curve in the spine. Attention has been somewhat too much concentrated upon mere shortening to the exclusion of angular or rotatory displacement.	I do not think it possible to establish an exact standard of good result for fractures of the thigh, since that which could be easily secured in the case of a sober, quiet, and healthy person, might be wholly unattainable in one who was nervous and restless, or the subject of delirium tremens. The obliquity of the line of fracture does not, in my opinion, affect the result in any marked degree. Rotatory displacement, the toes being everted, makes a patient permanently lame. In this, as in almost all other fractures, the most fruitful source of bad results is the tendency of so many to adopt a routine treatment. If the requirements in each case were carefully studied, and the proper appliances and effective maintenance of the apparatus insured, I think good results would be obtained in a larger proportion of cases.
J. R. Weist, Surg. to St. Stephen's Hosp., Richmond, Ind.	In simple fractures of the shaft of the femur in the adult, union of bone without other deformity than from one-half to three-quarters inch shortening.	In patients under twelve years, I should consider union without shortening or other deformity a satisfactory result.

NAME OF SURGEON.	OPINION.	REMARKS.
John B. Roberts, Prof. Anat. and Surg. Phila. Polyclinic, Phila., Pa.	1. Absolutely firm union. 2. So little difference in length of the limbs that no *marked* limp occurs in walking. 3. Not much angular deviation in the normal line of the bone. 4. Not enough rotatory deviation to make a marked inversion or eversion of the leg or foot.	2. As from one-quarter to one-half inch difference in length often exists in normal limbs, that much shortening may remain after fracture in one of a pair of symmetrical legs without making the result unsatisfactory. Even greater shortening may remain after fracture of a long leg without making the result unsatisfactory; while a less amount occurring after fracture in a short leg will cause a decided limp and make an otherwise satisfactory cure seem unsatisfactory. I do not believe that any fracture of the shaft of the femur is likely to be cured without some shortening, though it may, I admit, be impossible to prove its existence during life. 3. Slight bowing is of no more importance than that often observed in uninjured femurs and tibias of adults.
A. Vander Veer, Prof. Surg. and Clin. Surg. Albany Med. Col., Albany, N. Y.	In oblique fractures we must expect some shortening, not to exceed one-half inch.	In a transverse fracture my experience has been that a very large proportion result in perfect union, with possibly one-quarter inch or so of shortening in some few cases.
Basil Norris, Surg. U. S. A.	Half an inch shortening would be to me a result entirely satisfactory.	Since the use of adhesive-plaster extension I have seldom seen so much as one inch shortage (when union took place in a reasonable time) in a case of single, simple fracture of the shaft of the femur . . . even though there be unnatural adhesions of the soft parts, and consequent limitation of the joint-motions, for these results are sequences of injury and repair that are unavoidable.
R. B. Bontecue, Surg. Marshall Inf., Troy, N. Y.	Not more than one inch shortening, and the original axis of the shaft restored without inversion or eversion of the foot.	
S. H. Weeks, Prof. Surg. Med. School of Maine, Portland, Me.	In adults, when the fracture is oblique, as it usually is, firm union with shortening of half an inch.	When the fracture is transverse, union occurs without shortening. My method of treatment is Buck's extension apparatus, with elevation of foot of the bed for counter-extension, and sand-bags on each side of the limb.
L. S. Pilcher, Prof Clin. Surg. Post-Graduate Med. School, New York.	In my experience the cases are exceptional in which a simple fracture of the shaft of the femur cannot be conducted to a cure with a shortening of less than half an inch; often in young subjects an appreciable shortening will remain.	I cannot, however, approve the idea of setting up any particular degree of shortening as a satisfactory or unsatisfactory result. Perfect restoration to the length that existed prior to the injury will, of course, be aimed at by every surgeon, and if he has done the best he could for his patient under the particular circumstances of the case, always variable—*i. e.*, in no two cases the same—the result, whatever it may be, must be accepted as surgically satisfactory for that case.
W. S. Forbes, Prof. Anat. Jeff. Med. Col, Surg. Prot. Episcop. Hosp., Phila., Pa.	1. The long axis and anterior surface of the inferior fragment should be in perfect accord and continuous with the long axis and anterior surface of the superior fragment. 2. The bond of union should have its transverse diameter but little, if any, in excess of the transverse diameter of the femur above and below the seat of fracture. 3. There should be but little, if any, shortening of the bone *several years after fracture* and its more skilful treatment. 4. The soft parts of the extremity should be free from scars and marks of the apparatus used in the treatment.	2. This fact would show, for the most part, that a good original adjustment of the fragments had been made by the surgeon, and that he had gently but firmly held the fragments in the proper position during the process of treatment, and that consequently there had been but little irritation of the parts. 3. I have so often found some little shortening that could not be attributed to difference in the length of the two femurs, which has been so often noticed in persons who never had a fracture, that my clinical experience leads me to think that, for the most part, some shortening usually follows a fracture, even a simple one, of the femur. I believe the shortening to be the result of the angular projection on the proximal surfaces of the fragment, and the shortening of the bond of union under the pressure of the superincumbent weight in early going about before solidity takes place.
J. D. Rushmore, Prof. Surg. Long Island Col. Hosp., Brooklyn, N. Y.	If the ordinary function of the limb has been restored, even with some deformity and moderate shortening, if the patient is able to use the limb for walking.	In cases in which the deformity is noticeable by the use of tights, and interferes with previous occupation, or necessitates a change, a moderate deformity might constitute an unsatisfactory result.
A. T. Cabot, Surg. Mass. Gen. Hosp., Boston.	In children under fourteen full length ought to be obtained; in patients over that age any result which gives from one-half to three-quarters of an inch shortening is to be looked upon as satisfactory.	In measuring the leg for shortening it is to be remembered that the legs are not always even in length in the first place, and a fracture of a shorter leg might give an apparently greater shortening than was real. The more muscular the leg the greater the chance of shortening due to contraction of the muscles and the slipping of the fragments.
DeF. Willard, Prof. Orthoped. Surg. Univ. of Pa., Phila.	When the shortening is less than half an inch, the foot and lower limb are in good position, and the restoration of function is complete.	I consider that a certain degree of loss of the structure by absorption of the two fractured ends is almost universal.
J. H. Brinton, Prof. Pract. Surg. and Clin. Surg. Jeff. Med. Col., Phila.	Any result is satisfactory in which the shortening does not exceed three-quarters of an inch, and the proper relations of the axis of the limb are maintained.	
J. E. Mears, Dem. Surg. Jeff. Med. Col., Phila.	Union with shortening of the limb from one-half to three-quarters of an inch.	
J. A. Comingor, Prof. Orthopedic and Clin. Surg. Central Col. Phys. and Surg., Indianapolis.	The fewest number of fractures of the shaft result in full length of limb; my cases have always fallen a little short; the average is about half an inch.	I have measured many cases of my own and others, and they were invariably a little short. I think it barely possible to obtain full length in oblique fracture. The method used by me is the plaster-of-Paris; its application has been made within a few hours or a day or two.
H. H. Mudd, Prof. Surg. Anat. and Clin. Surg. St. Louis Med. Col., St. Louis.	We should obtain union with the femur of normal length; the thickening at the point of fracture should be moderate in degree, not enough to interfere with the function of the leg, or to produce deformity.	The function of the limb should be practically perfect.

NAME OF SURGEON.	OPINION.	REMARKS.
L. McL. Tiffany, Prof. Surg. Univ. Md., Baltimore, Md.	1. Functionally the united femur should be as capable, as a weight-carrier and as a lever, as before the break. 2. Anatomically we do not consider rotatory or angular deformity. 3. Shortening is included in a satisfactory result.	1. The presence of persistent pain implies something more than a simple fracture; function is to be tested *months* after union is firm. 2. Practically it is found that the slight angular distortion not so unusual in the upper portion of the shaft does not impair function. In childhood there is a tendency to the correction of angular deformity. 3. Distinction is to be made between fracture occurring before and after the growth of the individual has been attained; prior to that period the shaft appears to grow (lengthen) more rapidly during a certain time than does the unbroken femur; hence shortening is comparatively less than in adult life. I do not remember having seen a museum specimen of adult femur united after fracture without shortening. Measurements to determine shortening after fracture are unsatisfactory owing (*a*) to physical difficulties, and (*b*) to the natural differences in the limbs.
S. Marks, Surg. St. Mary's Hosp., Milwaukee, Wis.	Taking into consideration all oblique, simple fractures of the femur in adults, an average of from one-half to three-quarters of an inch shortening.	Much depends upon the obliquity of the fracture and its location.
T. G. Morton, Surg. Pa. Hosp., Phila., Pa.	A moderate degree of shortening, say half an inch, more or less.	In most cases the line of fracture determines the shortening, which may be unavoidable and considerable; in transverse or partially transverse fractures little or no shortening is likely; in oblique or comminuted fractures more or less shortening will ensue, according to circumstances. Many other factors are liable to influence deformity, so that each case must be judged according to the nature of the injury. Asymmetry of the lower limbs is now recognized as the rule and not the exception, and, therefore, measurements can really have no certain practical value.
M. H. Richardson, Surg. Mass. General Hosp., Boston, Mass.	A straight limb with a shortening of less than an inch.	I would consider the result satisfactory it the patient could walk without a limp, and if there was neither pain nor disability.
T. F. Prewitt, Prof. Prin. and Prac. Surg. and Clin. Surg. Mo. Med. Col., St. Louis, Mo.	A shortening not exceeding a half or three-quarters of an inch.	
J. E. Owens, Prof. Surg. Anat. and Op. Surg. Chicago Med. Col., Chicago, Ill.	When the shortening does not exceed an inch and a half, and there is no unnatural bowing or angularity at the seat of fracture.	When the shortening exceeds an inch and a half there is some particular reason for it, such as inability to bear extension or the pressure of coaptation splints, or undue restlessness from confinement, or tampering with the dressings, or delayed union, or disobedience to the doctor's rules and failure to follow his advice, or a faulty method of treatment, or inefficiency in the management of a good method.
E. H. Bradford, Surg. Boston City Hosp., Boston, Mass.	In adults I should hope for no greater shortening than half an inch.	This, however, is a general statement, and will necessarily vary with the nature of the fracture, whether transverse or oblique, or in what portion of the shaft the fracture should occur.
E. M. Moore, Surg. St. Mary's Hosp., Rochester, N. Y.	In teaching I have taken the position that a shortening of one inch was allowable. Few persons are rendered lame with this relation between the two limbs after the sensibility of the new tissue has passed away. The attempt to prevent any diminution of the length of the limb is painful and sometimes prevents union, so that for a long time I have regarded a shortening of half an inch as a result of typical excellence, assuring contact and preventing lameness.	The question of a satisfactory result, independent of union, resolves itself into a consideration of the amount of shortening and deformity from an improper line between the two fragments and the proper position of the foot. The most obvious deformity is clearly that arising from the shortening of the limb. If not treated at all, this will vary from two to four inches, seldom less and seldom more. The deformity produced by the passing of the fragments is greater very much in proportion to the shortening; when the fragments overlap so far that the whole diameter of the bone is applied to that of its fellow, a huge tumor is apt to result, increased by the exudates. Moreover, a bending of the limb is likely to result when the shortening is marked, especially when the fracture is at the juncture of the upper and middle thirds. Transverse fracture is an idealism; practically it does not occur; it is only approximated. When a shortening of only half an inch exists there is a slight deflection from a straight line, which becomes essentially corrected by absorption of the broken fragments. I make no exception when the fracture is greatest below the lesser trochanter; when treated properly there should be scarcely the half-inch shortening allowable in the middle of the shaft.

If, in an adult, a fracture is followed by a change in the lengths of the legs there may be a temporary limp, due to the failure of the patient at once to adjust the pelvis and spine to this new condition. But in a vast proportion of cases the limp gradually disappears, or, if it becomes permanent, the result is due to the careless habits of the patient. This fact was strikingly illustrated at one of the military hospitals during the late war. This hospital became the rendezvous of soldiers who had recovered from crippling injuries of the lower extremities. It was noticed by the surgeons that there was a striking difference in the degree of lameness or limping among the men having the same degree of disability, and that some men with shortening of one leg to the extent of one-fourth of an inch had a much greater limp than others with from three-fourths of an inch to an inch of shortening. An attempt was made to overcome this defect by forming a company, and placing the men under the

drill of an officer of the regular army, with instructions to prevent limping in their exercise. The result was surprising. The limping gait quickly disappeared, even in those suffering from the greatest degree of shortening and deformity. This experiment proved that lameness or limping is not a reliable test of impairment of function, and should have only a relative value in an estimation of results.

We must conclude that lameness should be regarded as a proof of an unsatisfactory result only when it is due to a degree of shortening that renders a limp a necessity, and cannot be overcome by the efforts of the patient, but requires the aid of artificial appliances. We can find no better guide to determine the degree of shortening compatible with a useful limb, so far as lameness is concerned, than by referring to the standard that is furnished us in the discrepancy in the lengths of limbs that Nature has established. As has been stated, the most accurate measurements of healthy persons give an average difference in the lengths of the legs of about one-half an inch. But this difference may amount to one inch (or even more) in perfectly healthy and well-formed limbs. We may justly conclude, therefore, that a shortening of one-half an inch as the final issue of treatment of a fracture of the thigh, and after a proper use of the limb, gives a perfectly natural relation between the two limbs, and hence is an ideal result. We may conclude further, that if the shortening, after use, amounts to one inch, the result is still satisfactory, for this relation of the limbs as to length is still in accordance with the natural law of conformation. These measurements, it should be stated, are of the length of the entire leg, and not of the thigh only.

6. *Restoration of function.* The function of the lower limb is that of locomotion, with power to sustain whatever superincumbent weight is necessarily imposed by Nature or art. Essential to this function is strength of the femur at the seat of fracture, free and unimpeded action of the muscles, and proper motion of the knee-joint. The determination of the degree of restoration of function cannot be made until a suitable time has elapsed after the treatment has been suspended; for the recovery of the free action of the muscles and of the knee-joint requires persistent use of the limb for a variable period, depending much upon the age of the patient and the severity of the injuries inflicted when the fracture occurred.

We should fix upon one year after treatment has been discontinued and the patient has begun to use the limb as a reasonable period before a final judgment can be formed as to the completeness of restoration of function. If at the close of that period the patient has no other disability than the lameness, within the limits of shortening already given, the result should be considered satisfactory.

7. *Conditional results.* There is a class of cases in which our estimate of results must be based upon a careful study of the special circumstances connected with the treatment of each case. Results widely different from those already given may and must be regarded as satisfactory in these cases, when we give proper consideration to the conditions under which the treatment is necessarily pursued. The treatment may have been conducted under circumstances in which it was impossible to secure proper apparatus, or the injury may have involved other parts so as to prevent the patient from taking the necessary position, or the patient may have suffered from delirium or other disturbing malady. These cases must be regarded as exceptional; each one is to be decided according to its special features; and they need no further notice in this report than simple recognition.

Your committee respectfully submit the following conclusions, which they believe are in accord with scientific investigations, and which embody the experience and the opinions of the members of the Association, as far as they have been communicated to the committee.

CONCLUSIONS.—A satisfactory result has been obtained in the treatment of fracture of the shaft of the femur when—

1. *Firm bony union exists.*

2. *The long axis of the lower fragment is either directly continuous with that of the upper fragment or the axes are on nearly parallel lines, thus preventing angular deformity.*

3. *The anterior surface of the lower fragment maintains nearly its normal relation to the plane of the upper fragment, thus preventing undue deviation of the foot from its normal position.*

4. *The length of the limb is either exactly equal to that of its fellow, or the degree of shortening falls within the limits found to exist in 90 per cent. of healthy limbs, viz., from one-eighth of an inch to one inch.*

5. *Lameness, if present, is not due to more than one inch of shortening.*

6. *The conditions attending the treatment prevent other results than those obtained.*

THE CONDITION AND PROSPECTS OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, AND ITS INDEX-CATALOGUE.[1]

BY JOHN S. BILLINGS, M.D.,
SURGEON, UNITED STATES ARMY.

OF late years those physicians in this country who make use of medical literature in connection with

[1] Read before the Association of American Physicians, Washington, Friday, September 25, 1891.

their investigations or writings, have, for the most part, become acquainted with the resources of the "Library of the Surgeon-General's Office," as it is officially designated, and many of them are much interested in its progress and prospects. I am often asked how the collection is progressing, how near it is to completion, what it is most in need of, when the *Index-Catalogue* will be done, whether it will be followed by a supplement, whether there is danger that the work of the Library may be checked in the future through changes in administration, and so on.

These manifestations of interest are, of course, very gratifying, and when the Chairman of your Program Committee demanded a ten-minute paper from me on this occasion it occurred to me that I would try to answer some of the foregoing questions, so far as I am able to do so.

The present condition of the Library is fairly satisfactory. It now contains 102,000 volumes and 152,000 pamphlets, counting as pamphlets all octavos and smaller sizes having less than 100 pages, and all quartos of less than 50 pages. During the last five years, *i. e.*, from July 1, 1886, to June 30, 1891, the additions to it have included 25,237 volumes and 55,900 pamphlets, or an average of 5000 volumes and 11,000 pamphlets yearly. Of this annual increase, about 2000 volumes and 4000 pamphlets have been of new or current literature, and the remainder have been publications of previous years or centuries. About one-fifth of these accessions, of both new and old literature, have been presented; the remainder have been purchased. So far as mere size goes, it is the largest collection of medical literature in the world, and for the last five years has been increasing more rapidly than any other similar library containing 25,000 volumes and upward. It is especially rich in medical periodicals and Transactions of societies, of which classes it now contains about 34,350 volumes. The American, English, French, and German literature in all branches of medicine that has appeared during the present century is very fully represented, and over 90 per cent. of all the medical literature of the world for the last ten years is in the library. The whole is conveniently arranged in a fire-proof building, and is catalogued.

So much for the favorable side of the situation; now for a statement of some of the principal defects and deficiencies. Of medical incunabula, it contains 140 volumes, or about one-eighth of the medical works published prior to 1500. Of the published works of the ancient Greek, Roman, Arabian, and Hebrew medical authors, it has one or more editions of nearly all, but these editions are not in every instance the best. Of the early Spanish and Portuguese medical literature, it has almost nothing; of French medical works of the sixteenth century but little; of French medical theses prior to 1800, very few. Of the English, French, and German medical books of the 16th, 17th, and 18th centuries that are of any importance historically or practically, it has about 75 per cent.; of the Italian, about 50 per cent.; and of the Spanish, about 25 per cent. In its periodical literature it is especially deficient in the Spanish and Italian prior to about 1850, in the French prior to 1780, and in the Russian prior to 1860. If I could add to it about ten thousand volumes of my own selection, it would, I think, contain at least one edition of every medical work of any practical use or importance that has ever been published, although it would still not possess some fifty thousand pamphlets and theses, each of which might be of some historical interest.

These deficiencies in the Library are being gradually supplied, but the acquisition of the older books and pamphlets that are still wanted is becoming every year a slower, more difficult, and more costly process. This is due to the fact that the books still wanted are many of them rare, and only appear in the market at intervals of from five to fifty years; to the fact that the number of competitors for such books is increasing, and, above all, to the fact that the expenditure of time required for the examination of the numerous catalogues and lists received at the Library in order to select those books that are still wanted is becoming very great in proportion to the results obtained. To check off a catalogue of a thousand medical books with the result of finding about four that are really desirable, a dozen that may be accepted as filling gaps, and about twenty small theses that are not in the collection, involves an amount of clerical work that costs as much as, if not more than, the books thus obtained. In one sense it is true that this is a satisfactory condition for a library to be in, but, nevertheless, the loss of time spent in such checking is to be regretted.

With regard to current medical literature, the amount increases each year, but the rate of increase is becoming slower. Comparing the period of 1890 with that of 1880, we find that the number of medical writers increased from 11,600 to about 14,200, or a little over 22 per cent. There were published in 1890 about 2000 volumes and 4000 theses, pamphlets, and reports in medical literature. Of the volumes, about 930, or not quite half, were furnished by medical journals and Transactions, as against 864 of the same kind in 1880—being an increase of about 7½ per cent. Excluding the journals, Transactions, and theses, the number of medical books and pamphlets published in 1890 was about 1850 as against 1600 in 1880—being an increase of about 15½ per cent. This indicates that the increase in the number of medical writers, and in the quantity of medical literature that they have pro-

duced, has not been proportionally as great as the increase in population and in the number of physicians in civilized countries during the decade, which confirms the statement that I made ten years ago, that the rate of increase is becoming smaller.

In the United States the proportion of periodical literature to the whole is much greater than it is in other countries—for in 1890 it produced about 250 volumes of medical periodicals, 60 volumes of new medical books, 20 volumes of later editions, and 28 volumes of reprints of English books and Transactions; while France produced about 160 volumes of medical periodicals, 250 volumes of new medical books, 20 volumes of later editions, and 15 volumes of Transactions; Great Britain about 85 volumes of periodicals, 140 new books, 45 volumes of later editions, and 12 volumes of Transactions; and Germany about 175 volumes of medical periodicals, 175 volumes of new books, 80 volumes of later editions, and a dozen volumes of Transactions. All this is exclusive of pamphlets. Of course, quantity in medical literature has no definite relations with quality or value, but I am speaking now merely with reference to the number of separate pieces that are to be obtained, catalogued, and cared for, and you will see that, including journals, Transactions, reports, books, pamphlets, reprints, and theses, we shall have at least 6000 new pieces to provide for this year. The indexing of articles in journals and Transactions will in addition involve the writing and classifying of about 25,000 titles.

Of the *Index-Catalogue* of the Library, twelve volumes have now been printed—carrying the work to S. The thirteenth volume is nearly ready for the press, and the manuscript for the rest of the work—at least two volumes more—has been prepared, but has not yet been finally corrected and arranged. As we can print but one volume a year, it is evident that during the twelve years that have elapsed since the publication was commenced a large number of titles of books and articles received too late to be placed in their proper places must have accumulated, and this accumulation becomes more rapid every year as we get further down the alphabet in the course of printing the work. At present the number of unprinted titles thus accumulated under authors and subjects down to S, probably amounts to 70,000 author- and 240,000 subject-titles, the latter of course including the titles of indexed journal articles. If these were now printed they would make about four volumes of the size of the volumes of the *Index-Catalogue*, and three years hence, when this first series of the *Catalogue* is finished, there will probably be material on hand sufficient to form at least five volumes of a supplement or second series, which will no doubt expand into six volumes by the time the printing of this second series is finished—that is, if the Library continues to increase as it has done for the last five years.

The twelve volumes of the *Index-Catalogue* already printed contain 137,578 author-titles covering 66,855 volumes and 120,000 pamphlets, 522,092 subject-titles covering 128,284 titles of books and pamphlets, and 393,808 articles in journals and Transactions. The titles of articles in journals and Transactions are printed only under subject-headings, those of books and separately-paged pamphlets and reprints are printed twice—once under the name of the author and once under the name of the subject. All the cards for journal articles have been preserved, and when the printing of the *Catalogue* is completed, it is proposed to assort these according to authors, so as to bring under each man's name the title of all the articles he has written that have been indexed. Whether this will ever be printed I do not know. The chief errors in the *Index-Catalogue* are those of omission. About fifty serious errors in the first twelve volumes have thus far been detected, but the main defect is the failure to include under the proper subject-headings some books and journal articles that are in the collection. We have gained experience as the work has progressed, and the later volumes seem to be more full and accurate than the first.

Of main and subordinate subject-headings the *Index-Catalogue*, as a whole, contains about 20,000, and in placing the proper headings on the subject-cards to indicate where each is to be placed, it is necessary, in order to secure good results, that the person doing this shall not only remember the general scheme of classification, but the details of between four and five thousand of the subject-headings used. If he makes an error, the card goes to the wrong place and is liable to be omitted in printing; but, in the long run, it is sure to be discovered and placed where it belongs.

In connection with the *Index-Catalogue* a few words with regard to the *Index Medicus* may be of interest. This, as you know, is in the main a record of the titles of new books and articles in periodicals received at the Library, to which are added the titles of a few books advertised as published but not yet received. It is not published by the Government, but by Mr. George S. Davis, of Detroit, who pays all expenses connected with it, and is entitled to the thanks of all who use it for his public spirit and enterprise in maintaining its existence, since the amount received by him for subscriptions barely meets the cost of its publication. At present 482 subscriptions are made for this periodical, of which 90 come from the U. S. Army Medical Department, 224 from the rest of the United States, and 168 from other countries. Of the subscriptions from foreign countries, Australia sends 5; Belgium, 2;

Brazil, 1; Canada, 2; England, 41; France, 26; Germany and Austro-Hungary, 63; India, 1; Ireland, 2; Italy, 1; Mexico, 1; Russia, 9; Scotland, 9; Sweden, 2; and Switzerland, 2. Of the home subscribers, California furnished 8; Colorado, 1; Connecticut, 3; District of Columbia, 13; Georgia, 2; Illinois, 9; Kentucky, 1; Louisiana, 3; Maine, 2; Maryland, 10; Massachusetts, 31; Michigan, 8; Missouri, 4; Nebraska, 1; New Jersey, 5; New York, 69; Ohio, 8; Pennsylvania, 33; Rhode Island, 4; South Carolina, 1; Tennessee, 1; Vermont, 1; Virginia, 1; Wisconsin, 4. For the large cities, the figures are, New York, 50; Philadelphia, 32; Boston, 24; Baltimore, 10; Cincinnati, 7; Chicago, 6; San Francisco, 4; Detroit, 4; and St. Louis, 3.

This is the last of the statistics of the Library and matters connected with it which will be inflicted on you at this time. The figures themselves may be dull, but some interesting, and even amusing, conclusions may be drawn from them, which I leave for you to do.

In conclusion, I may say that the future prospects of the Library are excellent. It is not dependent on the skill or energy or good-will of any one man; it is becoming more and more known to, and more and more used by, the members of the medical profession, and so long as they are interested in it, the necessary appropriations will be made and the skilled force employed to increase, preserve, and catalogue it. The service rendered by a number of those employed in the Library is not a mere matter of money—they are deeply interested in their work and proud of the results, and they can and will carry it on and instruct others who will come after them and do likewise. They have to handle much rubbish, for the proportion of what is both new and true is not much greater in medicine than it is in theology, but in a great national collection this is unavoidable, and the best they can do is to make a first rough assortment, and then make the whole accessible to those who wish to use it. There is no doubt that the publication of the *Index-Catalogue* will be completed, and that a supplement will speedily follow.

Just at present the most unsatisfactory feature about the Library is the fact that many of its books and journals are not fully available for use owing to the fact that we cannot get them bound. Under existing laws all the binding of the Library must be done at the Government Printing-office, which has not room or men sufficient to do the work required for the different departments of the Government and for members of Congress. The result is that the Library now has about 10,000 unbound volumes, and this number is increasing every year. When a journal is sent to be bound it may be six months or more before it is returned. With the erection of additional accommodations for the Government Printing-office it is to be hoped that this evil will in time be abated; but under the present system there will always be more or less delay in making recent books and periodicals available for use. The most effectual remedy would be a change in the law, whereby the Library could have its own binding done in its own building and under its own control.

CLINICAL MEMORANDUM.

ARSENITE OF COPPER IN DIARRHEA.

By C. S. STEWART, M.D.,
OF SCRANTON, MISS.

My attention having been called to the efficacy of arsenite of copper in all forms of bowel trouble, I have managed to find enough cases for testing its virtues, and have come to the conclusion that although its healing qualities are overrated, it is still very useful in subacute or chronic forms of diarrhea, rather than in the earlier stages. The following cases will illustrate:

Case I.—Mrs. H., aged thirty-five years, had diarrhea with varying degrees of severity for two years, and had tried changes of treatment and climate to no purpose. As she had previously a malarial attack, I used quinine in the beginning of the treatment, but the principal remedy was arsenite of copper, the one-hundredth of a grain given each day. Improvement was noticeable at once and in six weeks recovery was complete.

Case II.—H. R., two years old, began with an attack of summer diarrhea, and after a week improved slowly under the usual remedies recommended for such cases, but shortly afterward suffered a relapse, and the condition was fully as bad as before. Then all treatment was stopped, and arsenite of copper, the one-hundredth of a grain given during the twenty-four hours, was continued alone, and was followed by speedy and permanent improvement.

Case III.—M. V. C., aged forty years, was a steady drinker and subject to attacks of diarrhea. The present attack began as a "bilious spell," but the bowel-condition grew steadily worse, and despite nearly every remedy offered for such conditions, there was a continual decline, followed by a slow improvement after a couple of weeks. The patient then took a trip to Healing Springs, Ala., but returned in a worse condition than before, with eight or ten stools each day, a considerable elevation of temperature, and the tongue looking like a piece of raw beef, the stomach irritable, and nausea easily provoked. Since hardly anything could be given, arsenite of copper, because of its tastelessness, was begun, and its administration was followed by a subsidence of the bad symptoms and a speedy convalescence.

The physiological action of this remedy has not been sufficiently explained, but it evidently exerts both a tonic and astringent effect, correcting the disorder by restoring a healthy condition of the bowel, and leaving the patient well. The drug is soluble in water, and perfectly tasteless, and, especially with children, its range of usefulness is great. Further experience will, no doubt, determine the limits of its usefulness.

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SATURDAY, SEPTEMBER 26, 1891.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

WHEN one thinks of such professional gatherings as that which has just been held at Washington, the question arises why so many busy men should steal from their needed rest the time to prepare their many papers, to attend the meetings, and at much and varied expense leave home and practice at a particularly busy season. The answer will be found to lie deeper than would at first appear. The desire to obtain honor in the eyes of one's fellows, the ideals of personal ambition, sociability, etc., are hardly ever wanting in the actions of any large body of men, but in none are they more subordinate than in the profession of medicine. Such a ferment of new thought and scientific zeal pervades its members that selfish aims are forgotten in the enthusiasm of new discovery and therapeutic power. It is indeed a marvellous thing—this of a splendid army of men seeking with ardor its own professional undoing. However far we may be from an absolute prophylaxis and cure of all disease, the fact remains that every true physician is devoted to that ideal—seeking to make his own office a useless one. It is precisely this aspect of our professional life that can never fail to elicit the admiration of a discriminating and intelligent public sentiment. These men do not meet to discuss how they can best obtain the plums of insurance fees, the greatest commercial and legislative advantage. The keynote and rallying cry of every speaker has been like that of the old Roman CATO, with disease as our Carthage.

As we go to press the great Congress at Washington is closing its sessions. It is as yet too early to pronounce any critical judgment as to the proceedings in detail or as a whole, but the tremendous vitality and earnestness of American medicine is manifest in the simple fact indicated by the summarizations of the official programs: There were announced more than 400 addresses, papers, and discussions. Besides the Americans present, there were at least nine invited guests from England, four from Scotland, three each from France and Germany, as well as others, all taking active part in the proceedings. But, of course, size and numbers do not count in such matters, unless at the same time quality dominates. In the current and coming numbers of THE NEWS, our readers will have an opportunity of judging for themselves as to the scientific value of the contributions. Extraordinary endeavors have been made to secure in advance, directly from the participants, either their original papers or their own authoritative abstracts. The promptness and willingness with which compliance has followed request will place every reader of THE NEWS under obligations to the members of the various societies. Author and reader have a mutual interest in a trustworthy report.

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Second Triennial Meeting,
Held at Washington, September 22, 23, 24 and 25, 1891.

(Specially reported for THE MEDICAL NEWS.)

FIRST DAY—SEPTEMBER 22D.

THE Congress was called to order by the Chairman of the Executive Committee, DR. WILLIAM PEPPER, who introduced the President, DR. S. WEIR MITCHELL, of Philadelphia.

The first scientific matter brought before the Congress was a discussion on "Conditions Underlying the Infection of Wounds, Including a Discussion of Disinfection with Reference to Treatment of Wounds, of the Relation of Bacteria to Suppuration, of the Resistance of Tissues to the Multiplication of Bacteria, and of the Effect of Antiseptic Agents on Wounds."

The discussion was opened by the Referee, DR.

WILLIAM H. WELCH, of Baltimore. He said that the presence of certain kinds of bacteria as an essential condition of wound-infection is so well established that discussion of this point is not likely to arise. The comparatively simple conception that a wound to which bacteria gain access necessarily becomes infected has been greatly modified. The traumatic infections present their own peculiar problems. The doctrine of wound-infection involves the consideration of many varying and often complicated factors relating both to the agents of infection and to the individual exposed to the infection.

The subject was considered under the following heads: 1. What are the microörganisms concerned in the infection of wounds, and how do they act? 2. How are we to explain the great differences in the effects produced by pyogenic micrococci—their apparent harmlessness under some conditions, their fatal influence under others? 3. What are the ways by which bacteria gain access to the wound? 4. How often are bacteria to be found in wounds treated antiseptically or aseptically? what are the characters of these bacteria, and where do they come from? 5. What are the best means of surgical disinfection?

The observations as to the relative frequency of ordinary pyogenic staphylococci and streptococci are not altogether concordant. The yellow staphylococcus appears to be more common in furuncles and abscesses than the white staphylococcus.

Dr. Welch had found a white staphylococcus in small stitch-abscesses and minor grades of inflammatory disturbance, in wounds treated antiseptically and aseptically, which differs in certain particulars from the staphylococcus pyogenes albus. He suggested that it be called the staphylococcus epidermidis albus. The efforts to differentiate into distinct species the pathogenic streptococci have met with little success. The list of bacilli that may be concerned in suppurative and other inflammatory affections is much longer than was formerly supposed. The bacillus coli communis furnishes an illustration of the possible predisposition to infection afforded by intestinal lesions and of the much-disputed auto-infection. Of the suppurative inflammations examined bacteriologically with negative results, may be mentioned abscesses in which the bacteria were presumably dead, several cases of pyosalpinx and suppurating buboes, and some abscesses of the liver.

There is reason to suppose that the process of suppuration serves a useful purpose and is one of the most efficient weapons employed by Nature in combating invading microörganisms. Exactly how the abscess-formation checks the invasion of bacteria we do not know.

The quantity of a culture of the staphylococcus aureus required to produce suppuration is not the same for all tissues and all parts of the body. There are also variations in virulence of different cultures of the pyogenic cocci. As it is by their toxic products that the pyogenic bacteria do injury, it is not surprising to find that it makes a great difference in the result whether or not these bacteria enter the tissues already equipped with a reserve force of poisonous material or whether they must begin the fight unarmed. This matter of toxines is possibly of great importance in understanding the potentialities of the living agents of wound-infection. The differences in virulence found to exist between inflammatory exudates from various sources are much greater than those observed in the cultures of the corresponding bacteria on artificial media.

In regard to the conditions in or about a wound that favor the lodgment and development of pyogenic bacteria, it may be said that anything that interferes with the integrity of the living tissues in a wound is a predisposing cause of suppuration. Chemical irritants, such as carbolic acid and corrosive sublimate, favor the development of microöganisms. A solution of corrosive sublimate as weak as 1 : 2000 gives rise to a distinct line of superficial necrosis. We are not so well informed as to the influence exerted by blood in a wound. Most surgeons lay great stress on hemostasis in surgical operations, while others advise that in certain classes of cases the wound be permitted to fill with blood-clot. Is this a source of danger? Fresh blood-serum does not possess any such germicidal power over the pyogenic cocci as it does over typhoid and many other bacteria. The power of the living tissues to overcome a certain number of pyogenic bacteria is well recognized and the tendency of modern surgeons is to respect these tissues more and more, and not to destroy their vital capacities by the unnecessary application of strong chemical disinfectants, not to bruise them, not to make them too tense, not to strangle them, not to suffer in wounds the presence of spaces and foreign bodies that remove bacteria from the influence of the living fluids and tissues.

Of the various ways in which pathogenic bacteria gain access to wounds, that by contact with infected hands, instruments and other objects offers the greatest danger. The possibility of infection from the air cannot be ignored. Even in wounds treated aseptically or antiseptically it is not uncommon to find bacteria. The skin may have all sorts of bacteria upon it, but in addition it has its own distinctive bacteria. After the skin has been thoroughly washed and scrubbed, the prevailing organism will be found to be the white staphylococcus. This is often found in parts of the epidermis deeper than can be reached by any known means of skin-disinfection. We can now understand how, without any flaw in the antiseptic technique of the surgeon, this microörganism may be found present in wounds, and we have here an explanation of the frequent occurrence of stitch-abscesses, although the inference should not be drawn that the white staphylococcus is the only bacterium concerned in the production of these annoying complications. How much practical importance attaches to the demonstration of this coccus is not yet certain. The surgeon, with good technique, who does not bother himself about this coccus in the deeper layers of the skin, is not likely to be severely punished by the behavior of his wounds. Those who put in drainage-tubes and other extraneous substances will have to consider it. On the basis of researches on the bacteria of the skin, some surgeons have abandoned skin-sutures, the edges of the wound being brought together by subcutaneous sutures.

In regard to the methods of surgical antisepsis, it is said that the conditions for efficient chemical disinfection have been found to be far more complicated than was formerly supposed, and that wherever applicable the substitution of the simple and certain method of disinfection by heat is to be commended. For many pur-

poses in the operating-room chemical disinfectants still have their place, but their place is not in healthy wounds. Thorough scrubbing of the skin with soap and water, with a sterilized brush, removes many of the bacteria, but not all, and cannot be regarded as a satisfactory means of cutaneous disinfection. Corrosive sublimate accomplishes much less than is generally supposed. The best results obtained have been by a method in which a warm saturated solution of potassium permanganate, followed by a similar solution of oxalic acid, plays the principal disinfectant rôle. This is the procedure now adopted in the gynecological and surgical wards of the Johns Hopkins Hospital.

DR. ROSWELL PARK, of Buffalo, Co-referee, continued the discussion. The full text of his paper will appear in a future issue of *The American Journal of the Medical Sciences*.

He stated that all the sources of sepsis by no means concern the wound itself. The other principal sources of infection may be classified as follows:

1. Previous long-existent toxemia, as syphilis, diabetes, acetonemia, lithemia, alcoholism, malaria. 2. Previous anatomical changes that reduce vitality, as inherited diatheses, old age, amyloid change, chronic and acute nephritis. 3. Recent or acute toxemia, as uremia, typhoid, intestinal toxemia, stercoral toxemia. 4. Other acute conditions, as starvation, scurvy, anemia. 5. Conditions of environment, as bad hygienic surroundings. 6. Effect of anesthetics. 7. Effect of antiseptics.

Antiseptics may favor infection in more than one way. Mercurial and iodoform poisoning are not uncommon. When this is established the case becomes one of acute toxemia. The wounds may fail to unite and suppuration may occur. Again, the chemical reaction between the vital fluid and the antiseptic may cause a loss of the properties of the antiseptic agent, while the tissues on which it acts may have their constitution so changed as to favor rather than to resist infection. Investigations make it appear best to keep all antiseptic agents away from absolutely clean, fresh surfaces. The value of blood-serum as an antiseptic has been abundantly shown. This will be poured out in quantity sufficient to serve not only as a cohesive but as an antiseptic agent. The question here arises as to what is the best antiseptic. It would appear that for most purposes peroxide of hydrogen is the ideal antiseptic, as it not merely destroys living organisms but by oxidation of undesirable and infected material acts as a scavenger of the tissues. We have, however, yet to learn how to utilize to the fullest advantage the properties of blood-serum.

Direct infection may be of two varieties, self-infection or auto-infection, and contact-infection. The principal sources of contact-infection are as follows: 1. Skin and hair. 2. Instruments. 3. Sponges or their substitutes. 4. Suture materials. 5. The hands of the surgeon and his assistants. 6. Drainage material. 7. Dressing material. 8. Miscellaneous—*e.g.*, drops of perspiration, an unclean irrigator-nozzle, the nail-brush, the clothing of the operator or bystanders, etc.

The best plan of sterilizing the skin is shaving, followed for a day or two, if there is time, by the application of some antiseptic ointment. The skin should then be washed with sapo viridis of the German Pharmacopœia, containing 5 per cent. of lysol or hydro-naphthol. Then until the time of operation there should be worn a compress wet with some liquid, non-irritating antiseptic, such as creolin or lysol (5 per cent.), or hydro-naphthol in saturated cold aqueous solution. At the time of operation there should be a final scrubbing with hydro-naphthol soap, with shaving, and then the skin washed with equal parts of alcohol and ether, or alcohol and turpentine. When there is not time for this, thorough use of the nail-brush, the razor, and antiseptic soap, with subsequent use of alcohol and ether, must suffice.

Instruments are best prepared by dry sterilization, as this injures them less than other plans. In regard to sponges, there is nothing to be added to the well-known directions. It would seem better to use some cheap absorbent material, which after use could be thrown away. Silk is best sterilized by placing it in a test-tube, plugged and kept in a steam sterilizer for two periods, each of an hour. Silkworm-gut may be prepared by immersion for a few hours in a 1 per cent. aqueous solution of corrosive sublimate and then preserving in alcohol. Catgut is best prepared by immersion in benzine or ether to remove the fat. It is then dried, and soaked for one or two days in a 1 per cent. watery solution of corrosive sublimate, after which it is dried and transferred to oil of juniper-berries, and from this to strong alcohol containing 1 : 1000 of sublimate. In this, if desired, it can be boiled. It may be chromicized before being placed in the oil of juniper. The hands, even after having been in contact with septic matter, may be sterilized by the following method: Wash with soap and water, using the nail-brush; then wash the hands and arms with flour of mustard as though it were powdered soap; this will remove all odor; then wash with sapo viridis [G. P.], to which has been added 5 per cent. of lysol, creolin, or hydro-naphthol; then rinse and immerse in a deeply colored solution of potassium permanganate; the hands are finally rinsed and immersed in a solution of oxalic acid sufficiently strong to decolorize the skin in two or three minutes; the oxalic acid is rinsed off, and the hands may be considered aseptic. Drainage is probably required only in septic or infected cases.

After an ideal aseptic operation, only a sterilized and a protective dressing is required. In some cases there may be advantage in impregnating the dressing with some antiseptic.

Among miscellaneous sources of infection may be mentioned the use of an unguent applied to the skin to prevent the adhesion of dressings. Experiments have shown that ointments made with even 10 per cent. of resorcin or naphthalin, without the application of heat, contain bacteria. The same ointments, heated to the temperature of boiling water, seem to be sterile, and to suffer only from air-contamination.

Dr. Park presented the following conclusions:

1. A study of wound-infection and of the septic condition thereby produced is inseparable from a study of what constitutes immunity.

2. By a study of immunity is furnished the best clue to a due appreciation of the principles of asepsis.

3. The surgery of the future must aim to be aseptic, for, so far as recent cases are concerned, we have passed the merely antiseptic era.

4. Asepsis is to be achieved not alone by attention to the wound and the paraphernalia of operation, but by

the closest regard to the condition of the patient's organs and tissues.

5. Sepsis may arise from circumstances and conditions other than those pertaining to the wound itself, although hitherto practitioners have been too prone to scan solely this field when searching for its cause.

6. Sepsis and infection are combated in more than one way by natural agencies and by inherent properties of cells and fluids, totally aside from the measures that the surgeon institutes, and the wisest man is he who studies to take advantage of these vital activities rather than introduce new and conflicting elements from without.

7. A recognition of the power of chemotaxis possessed by organized and unorganized materials in such varying degree, can be utilized to great advantage as soon as it can be reasonably clearly defined.

8. A study of chemotactic activity appears to impress one with the truth of the phagocyte doctrine, which if substantiated will have an important bearing upon the principles as well as the practice of the surgery of the future.

9. The proteid material contained within cellular infectious organisms plays such a rôle both in causing chemotaxis as well as in poisoning the animal infected that we have reason to eagerly welcome all knowledge concerning it.

10. As fast as such proteid material can be isolated, we need among other things to study its effect upon the commonly used antiseptic agents.

11. We need to study much further the anti-toxic and bactericidal properties of human blood-serum, and the means by which we can avail ourselves of the same.

12. Some such classification of the various causes of lowered resistance to infection as that given, or of the causes of vulnerability or susceptibility, will certainly assist in a due appreciation thereof, and will often aid in so fortifying the patient that he may resist infection to which he would otherwise succumb.

13. The condition of enterosepsis, fecal toxemia, stercoral intoxication, or whatever it may be called, is certainly one that every practitioner has to fear and against which he should assiduously guard. It is not sufficiently generally recognized and combated.

14. A sub-form of this condition might justly be made and entitled gastrosepsis, comprising cases in which defective stomach digestion, often from dilatation, brings about a lithemic or other toxemic condition that favors infection.

15. Antiseptic agents in the past have worked a revolution in surgical practice and results. It is now time to know that they all have their disadvantages and to understand that strict asepsis will obviate the necessity of antiseptic applications.

16. The insurance of the aseptic character of such work necessitates the use of antiseptic agents of some kind upon everything that may directly or indirectly come in contact with wound-surfaces.

17. When this work is strictly aseptically performed, the use of drains, or further employment of antiseptics, is either an expression of mental uncertainty or of fear. It may be in the interest of humanity—undoubtedly it often is—but it is not attaining the ideal scientific work.

In the subsequent discussion, DR. ARTHUR T. CABOT, of Boston, referred to the debt that practical surgeons owed to the scientific workers. It is the knowledge of how to obtain aseptic wounds that has revolutionized surgery. As to the phagocytic action of the cells, and to the germicidal action of the blood-serum, the only question is, as to which of these processes is distinctly destructive. The bactericidal action of the blood-serum has been proved. These observations may serve to explain some of the phenomena in wound-fevers. It may be that in erysipelas, the irritation set up by the application of blisters, iodine, etc., may serve to limit the spread of the disease by the action of the blood-serum on the micrococci of the disease.

In the treatment of wounds it is desirable to avoid placing animal sutures in the wound. It is better to close all spaces in the wound by pressure. Culture-experiments have demonstrated that when, prior to the operation, the skin is free from organisms, at the close of the operation their presence may be detected, showing that bacteria had been sown on the wound by the air, or otherwise. If necrotic tissue or animal sutures be present, they may constitute a nidus for the development of the bacteria.

MR. THOMAS BRYANT, of London, said that if bacteria are the seed, we must remember that the soil is not of less importance. If the soil is not suitable for the growth of the seed, it will not sow. Except in a case of urgency, no surgeon would operate on a patient until the subject had been prepared for operation. In order to prevent the entrance of germs, irrigation is of service. For this purpose, iodine-water, made by adding a few drops of the tincture or solution of iodine to water, is a most valuable solution. This may be made of a light-cherry hue for clean wounds, and of a dark-cherry for dirty wounds. It also acts as a styptic. As a dressing, he uses wood-wool. The wound is dusted with iodol one part to from one to five parts of boric acid. In every operation there is a certain amount of molecular death, and drainage is required for thirty-six hours. For bringing the deeper parts of the wound in contact, pressure is better than deep sutures.

DR. HAROLD C. ERNST, of Boston, said that while it is true that nearly all forms of suppuration are attended by bacteria, yet it has been shown that a process corresponding to suppuration can be produced without the action of bacteria. The products of this suppuration, however, do not give rise to a like process when introduced into other animals. It has been shown that some of the agents used to destroy bacteria really favor their growth by diminishing the chemotactic power of the surrounding tissue-cells. Notwithstanding that laboratory experiments show the possible occurrence of chemical suppuration, it still remains to be demonstrated that the infection of wounds, as seen in practice, occurs without the influence of bacterial activity. The most important lessons taught by investigations on this subject are those that warn us that our pupilage is not yet over, and that we are but entering upon the first stage of our knowledge of the processes under discussion.

MR. JOHN CHIENE, of Edinburgh, said that he had assisted Professor Lister during the whole of his time in Edinburgh. The longer he lived the more he believed in the work of Lister and the impress that he had made on surgery. He considered bacteriological investiga-

tion as of the greatest importance, for on it the surgeon must depend in his daily work. Lister long ago spoke of the antiseptic value of the blood-clot, but John Hunter had long before pointed out the same thing. The spray is of great service. The term "integrity of the tissues" had been used, but John Hunter had also laid stress on the "vitality of tissues," which he defined as "the power of the tissues to resist putrefaction." The best results will be attained by not only improving the soil, but also by destroying the plant.

DR. ARPAD G. GERSTER, of New York, considered the many sources of contact-infection, and referred especially to infection the result of bad habits on the part of the surgeon. The surgeon may carry out all the details of aseptic and antiseptic treatment, and yet nullify all by rubbing his nose, his hair, or his face, or by placing the knife in his mouth that he might use his hand. An important point in the prevention of infection is clean dissection with the knife, without tearing or bruising the tissues. Irrigation and drainage could be eliminated only when the surgeon was absolutely certain of his asepsis; it is dangerous for the general practitioner to discard drainage. If he is not certain of his asepsis, he should cling to the older methods, and from these he may ascend to the highest degree of skill, when he can work with real asepsis.

SECOND DAY—SEPTEMBER 23D.

DR. P. S. CONNER, of Cincinnati, Referee, read a paper on "The Late Manifestations of Syphilis," which is to appear in a subsequent number of THE MEDICAL NEWS.

He stated that the early manifestations of syphilis occasioned little concern; but it can never be known in advance what the sequelæ will be. The victims of inherited syphilis suffer in greater degree and frequency from late lesions than do the cases of acquired syphilis. There is no sharply-defined line of separation between the early and the late symptoms. Speaking in a general way, the late lesions are neoplastic; the early lesions rarely so. The late lesions are not communicable. Their development is usually insidious. The bones and the nervous system are most commonly invaded. Extensively destructive and deforming bone-inflammations are almost exclusively confined to the head and the nasal regions. The explanation depends upon the exposed position of the bones, their thinness, the abundance of small vessels, and the intimate fusion of mucous membrane and periosteum. Chronic bone-disease and joint-disease in children, adolescents, and young adults are mostly tuberculous; in not a few cases, however, they are syphilitic. The most frequent and the most dangerous lesions are those of the nervous system. Affections of motion, sensation, and intellection are common in the order given. Hysteria may imitate syphilis. It is infrequent in men, while brain-syphilis is rare in women. Special lesions are not common. Exostoses may form; neoplasms may develop. There may be pain and palsy distributed in accordance with the site of the lesion. Most ataxics have had syphilis, but tabes is not of gummatous origin; nor can the sclerosis be regarded as the result of the diffused formation of fibrous tissue so often found in the cerebro-spinal axis. Antisyphilitic treatment generally fails to cure or even to retard the evolution of the symptoms.

Preëxisting tuberculosis aggravates the diagnosis of syphilis. Syphilis is not likely to be inoculated in a person with carcinoma. Carcinoma, however, not rarely invades an area in which there has long been specific thickening and induration, as in the chronic leucomata of the tongue. Occasionally a gumma becomes carcinomatous. When the disease is latent the wounds of syphilitics, as a rule, heal as promptly as in other cases; but when the specific lesions are in process of evolution, repair may be interfered with. Many cases of aneurism in persons under forty years of age depend upon syphilis. The mortality-rate from acquired syphilis is almost *nil*. Inherited syphilis is a grave disease. Four-fifths of the pregnancies of congenital syphilitics terminate prematurely.

DR. ABNER POST, of Boston, Co-referee, followed. He considered syphilis from the standpoint of the clinician and student, and not from that of the pathologist. He called especial attention to what is known as late hereditary syphilis, in which the disease is inherited, although the symptoms first appear after a lapse of years, with symptoms corresponding to the tertiary symptoms of acquired syphilis. The later forms of acquired syphilis are not necessarily a part of the case. The so-called late lesions occur much earlier in the history of the disease than is ordinarily believed. After the third year the chances of recurrence grow steadily less. As a preventive of late symptoms, early treatment by mercurials holds first place, but by no method can a cure be assured—that is, absolute immunity from subsequent outbreaks.

Induration and enlargement of the lymphatic glands is one of the common symptoms of early syphilis. In late hereditary syphilis the lymphatic system plays a conspicuous part.

Cutaneous lesions are second in frequency to the lesions of the nervous system in late acquired disease. Syphilis differs from tuberculosis in manifesting a preference for the long bones and their shafts, while tuberculosis attacks by preference such bones as those of the wrist and ankle.

Diseases of the joints are at times undoubtedly the result of syphilis. It is fairly well-established that serious syphilitic lesions of the gastro-intestinal tract may take place. As one of the possible causes of disease of the ileo-cecal valve, syphilis must be given a certain amount of consideration. Diseases of the nervous system dependent upon congenital syphilis constitute a large field practically unexplored.

Little importance can be attached to a negative history. Many syphilitics cannot know of the existence of the disease.

The prognosis must be a matter of special consideration. It is the persistence of the damage and not the specific lesions that cause the persistence of the symptoms. There is something to be deduced in the matter of treatment. Anti-syphilitic treatment has great power over the active processes of late lesions, but is powerless to restore the tissue already destroyed. The attempt to destroy a syphilitic tertiary sore is, in general, futile. The late lesions of inherited syphilis are as readily controlled as those of the acquired disease. Large quantities of iodides may be administered. In regard to treatment of retrospective disease, too much value must not be placed upon this element in doubtful

cases, for mercurials and iodides do have some influence upon tuberculosis.

The study of syphilitic phenomena is a necessity of medical progress. The possibility of syphilis renders uncertain the diagnosis of tuberculosis and carcinoma and other forms of malignant disease. What is needed are careful clinical studies, hospitals especially devoted to syphilis, and the study of syphilis made obligatory.

The subject was further discussed by Dr. Robert T. Edes, of Washington, and Dr. James Nevins Hyde, of Chicago.

In the evening, the President of the Congress, Dr. S. Weir Mitchell, of Philadelphia, delivered an address entitled "The History of Instrumental Precision in Medicine." He considered specialism in medicine, its virtues, and its shortcomings. He gratefully admitted the value of specialism, but he also cautioned against the perils to which the subdivisions of labor that it entailed exposed the profession of medicine. Dr. Mitchell paid a tribute to the growing usefulness of the Weather Bureau, especially in the study of meteorologic and climatologic influences upon disease and the therapeutics of disease. He made brief reference to the growing social changes by which woman is being and is about to be influenced by a masculine education, and the acceptance on her part of male standards of work and capacity. He then took up the advances that have been made in the methods of observation in disease, and confined himself especially to the earlier efforts to obtain accuracy by instruments in the study of the pulse, respiration, and temperature. Finally, Dr. Mitchell successively reviewed the stages through which the thermometer passed before it attained its present perfection, and the gradations by which the clinical significance of a study of the pulse was reached.

Third Day—September 24th.

Dr. A. L. Loomis, of New York, opened the discussion on "Fibroid Processes (Chronic Interstitial Inflammation, Scleroses); their Pathology and Etiology, with Especial Reference to the Influence of Diathesis and Heredity."

He held that fibroid processes cannot be considered as degenerations, for they are active and productive. There is always an abnormally high degree of activity in those elements that develop connective tissue. The only way in which fibroid tissue can develop is from growing cellular elements. Conditions of simple preponderance of fibroid tissue from the atrophy of other elements were not included under true fibrosis. Two forms of fibrosis were described, the hyperplastic and the inflammatory. The first is due to diminished nutritive supply, to parenchymatous atrophy, to nuclear proliferation and to connective-tissue hyperplasia. Inflammatory fibrosis is due to parenchymatous degeneration, to constitutional influences and to local attraction by the products of tissue-change—positive chemotaxis.

All agencies that diminish the vital forces by which the cell appropriates to itself its proper elements tend to the production of fibrosis. These agencies may be mechanical, chemical, or mental. Direct stimulation of fibrous growth, conditions including a limited degree of nutritive supply, conditions and elements that induce perverted nutrition, either degeneration or necrosis, including mechanical forces, perverted or defective nutritive supply, and toxic and trophic influences, may, any and all, cause fibrosis.

A diathesis may manifest itself by any bodily function displaying an activity out of proportion to the stimulant applied. In the fibroid diathesis, the growth of fibroid tissue is out of proportion to the degree of stimulation. Fibroid processes are not always injurious, as is seen in cases of cured tuberculosis. In seventy cases of cured tuberculosis under the observation of Dr. Loomis, fifty-four presented well-marked evidences of fibrosis. Diathesis often determines the nature or prominent action that follows a given irritant or stimulation, provided more than one is possible. It also modifies the ratio between the established process and its causes.

Dr. William Osler, of Baltimore, considered the fibroid process under the heads of degenerative, inflammatory and developmental. The degenerative were subdivided into the atrophic, the secondary degenerations, the toxic forms, as from lead, ergot, syphilis, the scleroses associated with similar changes in the smaller arteries and capillaries. Degenerative fibrosis is the most common. Inflammatory fibrosis was subdivided into secondary forms, in consequence of reactive inflammation following hemorrhage, tumors, foreign bodies, abscess and trauma, the scleroses that follow primary encephalitis or myelitis.

The following questions were suggested for consideration:

1. What is the relation of vascular change to the degenerative scleroses? How far histologically are they mesodermal or ectodermal, or are they mixed, containing both neurogliar and collagenous connective tissue?

2. In the lobar scleroses of children, what is the nature of the primary affection? Is it inflammatory, an encephalitis or meningo-encephalitis, or is the essential lesion in the vessels?

3. Can a purely ectodermal form be recognized in developmental fibrosis?

Dr. Charles L. Dana, of New York, then dwelt upon the chronic fibroid processes of the spinal cord, which he classed into primary degenerative, secondary degenerative, and reparative and inflammatory. The first includes locomotor ataxia, lateral sclerosis, combined scleroses, progressive muscular atrophy, and amyotrophic sclerosis. These scleroses are not inflammatory, but due to the primary destruction of cells and fibers. The causes of this degeneration were either toxic or disturbances of nutritive equilibrium by infections, vascular strain, or imperfect nutritive supply. They are not related to any special diathesis. The secondary fibroid processes have been shown to be probably neurogliar proliferations or gliosis, not a fibrosis. The inflammatory scleroses, including chronic myelitis, diffused myelitis, and transverse myelitis, are mixed processes, dependent upon a simple necrotic process, inflammatory processes, and secondary degenerations.

Dr. William T. Councilman, of Baltimore, discussed the fibroid process found in the liver, giving the results of investigations made in the Johns Hopkins Hospital. He dwelt upon the fact that the first element in the fibroid process was a necrosis. The fibrosis is not the result of stimulation. The tendency to growth is always present, and manifests itself as soon as the inhibition is removed.

AMERICAN SURGICAL ASSOCIATION.

Twelfth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

THE session was opened by DR. CLAUDIUS H. MASTIN, of Mobile, who delivered the President's Address. He expressed his appreciation of the importance of the trust that had been confided to him, and acknowledged the great honor of his position. He extended a cordial welcome to the members of the Association, together with their distinguished *confrères*. He traced the progress of the Association from its organization, eleven years previously, and paid an eloquent tribute to its founder, the late distinguished Samuel David Gross. The conception of the American Surgical Association was not in antagonism to the American Medical Association—quite the contrary. From the day on which the American Medical Association was organized Dr. Gross had been an active and influential member, once its President, often a contributor to its volume of *Transactions*. Governed by its code of ethics, he remained true and loyal to all its requirements, as evidenced by the fact that when on his deathbed he was asked by a friend what message he desired to send to the American Medical Association, he replied: "Give them my love." The last paper he wrote was being read in that Association during its session of 1884, on the same day that he died.

The first regular meeting of the American Surgical Association was held at Coney Island, and was attended by a small number of members. The second meeting was held at Philadelphia, with an attendance of twenty-five members. The third session was convened at Cincinnati, forty Fellows constituting its strength. The first volume of the *Transactions* was published subsequently to this meeting: Everything seemed to foreshadow a bright future, and nothing transpired to dim the occasion save the absolute refusal of its beloved founder and President to accept a reëlection to office.

That great man, the Nestor of modern American surgery, the founder and the cherished idol of the American Surgical Association, Samuel David Gross, standing without fear and without reproach, held that he had no preëmption right to office, and contended that he had occupied it long enough. He thought that his reelection would be at variance with the genius of our republican institutions and the habits of the American people. He believed that rotation in office should be the order of the day, not only among politicians but among scientists and professional men. He felt that his highest ambition, as respected this Association, had been accomplished. He appreciated clearly that the results of the work that he had begun were exceeding his most sanguine expectations, and were surely destined to pass into history. We knew that we were losing the guiding hand of a great pilot, and we were loath to permit him to leave the helm of office to serve in the ranks. In the language of a gifted Fellow of this Association, "Had the constitution conferred upon us the power, we would have put on him the royal purple, and hailing him chief among all, have bid him wear it for life." But he was inflexible, and that meeting was the last he ever attended. Those of us who were present on the closing day of that session can never forget the trembling words and tearful eyes when he said: "Now that I am about to retire from the discharge of these duties, I feel sure that the interests of the Association will be perfectly safe in your hands and in the hands of my distinguished successor. I have no greater ambition than to live in your affection and esteem, and to witness the ever-increasing prosperity of this Association. Its success is closely associated with the remainder of my life. I believe that we have an Association that is destined to become a power for good in the land, and when I am dead and gone you will not, I am sure, relax in your efforts to make it what its founder intended it should be—a great and lasting institution. God bless you, gentlemen, in all the relations of life! And may you ever be faithful to the interests of the profession, and the code of ethics in connection with which we have carried on our work."

Gentlemen, these were the farewell words of an old patriarch to his children, and they should sink deeply into your memories, for they were spoken by a truly great man, one of those who are "born beneath the aspect of a bright-eyed star, and whose triumphant adamant of soul is but the fixed persuasion of success."

In less than one short year from that day, he rounded up his great life and rested.

Subsequent successive and successful meetings were under the guiding hands of Moore, Briggs, Gunn, McGuire, Agnew, Cheever, and Yandell.

When this Association was first organized, anesthesia had but enlarged the domain of surgery. To-day antisepsis followed by asepsis has emboldened the surgeon to undertake and perform operations hitherto deemed impossible.

Whilst anesthesia had measurably lessened shock, antisepsis, with asepsis, has gone a step beyond, and done much toward the prevention of septic results, thus making the possibilities of surgery even greater.

In the last decade, the rapid and steady advances of the chirurgic art have far outstripped all other departments of the profession, and with the constant and seemingly never-ending improvements going on in all the branches—the discoveries in chemistry with the consequent additions to our materia medica; the revelations by the microscope, leading to a proper understanding of pathological lesions, and the clearing up of doubtful points in physiology, together with many new precisions in the study of all the branches of medicine—have enlarged the vista before us, so that no one can predict the limitations that may not be reached in the next ten years. It was but yesterday when the closed cavities of the body were held as sacred: the organs within the abdomen; the lungs and heart within the thorax; the brain and spinal cord cased by the skull and vertebral column, were each surrounded by a dead-line that none dared to cross. To-day they have each become the legitimate field into which the surgeon has carried his knife.

Dr. Mastin suggested that a business committee be appointed to prepare and arrange the scientific work of the meetings; such a committee, duly authorized, would relieve the president and secretary of much labor and responsibility, and the work that they would accomplish would better serve the interests of the Association than if left to the will and pleasure of the presiding officer.

He also suggested that the existing limit of fellowship be increased from one hundred to one hundred and fifty, at the same time urging that all due vigilance be exercised in the admission of new Fellows, so as to maintain the present high standard of the Association; age, scientific attainments, with surgical experience and general culture, should be the necessary prerequisites for admission.

Concluding, Dr. Mastin said that it is well known to the world at large, no less than to the profession of which he was an honored member, that Samuel David Gross stood first in the foremost rank in his chosen branch of the profession, and that the high position to which American surgery has attained all over the world is largely due to his example and his teachings. Since he has passed away and his life-work has gone into history, his real worth is fully appreciated, and therefore it is that his friends and admirers have been inspired to erect a monument to his memory—such a monument as will bear testimony to their gratitude and in the future be an incentive to those who are to come after us to do like noble deeds. To further this praiseworthy enterprise, Dr. Mastin suggested that a committee be appointed to confer with the friends and admirers of Dr. Gross, and with the medical profession of the whole country, to determine the best method to be adopted to secure the requisite amount for the erection of a monument either of marble or of bronze.

Dr. Gross was probably more widely known and appreciated than any American surgeon of recent years, and when it is remembered that thousands of his pupils are scattered throughout the whole of America—men who sat under his teaching and who still retain the warmest memories of him, it is not expecting too much to feel assured of their coöperation in raising speedily and without difficulty the requisite amount for the completion of such a monument.

This work should not be done by the Association exclusively, but by the profession of the entire country, because Dr. Gross belonged to no exclusive faction, but was a member of the profession at large. The American Surgical Association, however, should take the initiative in the movement, and there will not be the least doubt as to the successful issue of the undertaking.

If any man in the profession has merited such a tribute, surely Dr. Gross was most eminently entitled to it; for he was a man "animated by fervent attachment to the science and practice of his profession, and it was the duty of his life to augment and exemplify the resources of surgery; and by most assiduous and successful application of his time and his talents, his name has become known and honored, not only in his own country, but in every land."

Appreciated and honored as he has been in life, since he is dead such a monument to his memory should be built as will bear witness in after years to the estimate in which the profession of to-day holds its distinguished members.

If asked where such a statue should be erected, the answer would be, not at Easton, in the State of Pennsylvania, the place of his birth; neither at Cincinnati nor Louisville, where he laid the foundations of his future greatness, nor even in the city of Philadelphia, where that greatness culminated in all its grandeur; but in the city of Washington, the capital of the country which claims him as her own. His name and fame are a sacred heritage to the country at large and to the profession he loved so well, so that when the youth of the land make their pilgrimages hither they will behold the monument that their forefathers reared to commemorate the life and character of her greatest surgeon. It will teach them to emulate his example.

DR. D. HAYES AGNEW, of Philadelphia, read a paper on "The Present Status of Brain-surgery Based on the Practice of Philadelphia Surgeons." He confined himself to the work done by Philadelphia surgeons in trephining for epilepsy, traumatic and Jacksonian epilepsy, intra-cranial abscess, hemorrhage, hydrocephalus, cephalalgia, microcephalus, and neoplasms.

Traumatic epilepsy. Of this condition 57 cases were recorded. Of this number, 41 recovered from the operation; 4 died; and in 12 the result is not given. 32 experienced temporary relief, 9 obtained no benefit, 4 passed out of observation, 4 were operated on too recently to permit of the result being determined, and 4 are reported cured. In 1 of the cases reported cured the patient has been free from attacks for twenty-eight months; in 2, each for ten months; in the fourth a branch of the great occipital nerve was found imprisoned in the bone-cicatrix. While the results in these cases have not been satisfactory, it by no means follows that surgery holds out no hope against epilepsy. It is not saying too much to assume that surgery is responsible for the great majority of cases of traumatic epilepsy. This statement does not by any means criminate the surgeon of earlier days. Whenever the profession can accept the doctrine that all depressed fractures, however slight the depression and entirely irrespective of pressure-symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases. In view of the greatly diminished risk of trephining, it is not improbable that the operation will be extended even to cases of simple fracture or fissure of the skull.

Jacksonian epilepsy. In each of 14 cases, the discharging center was removed; 9 recovered, and 4 died. Of those that recovered, 3 had less frequent and less violent attacks; 1 realized slight benefit; 1 disappeared shortly after operation; and in 2 no benefit was observed; 1 is reported as cured, and in that case the operation was done during the present year.

Abscess. Of 18 cases of abscess 6 had had fracture of the skull; 2 had syphilitic necrosis; in 1 a foreign body had entered the brain; in 9 the abscess was due to middle-ear disease; and in 2 there had been a severe blow, without fracture of the skull. All the patients died in less than fourteen days.

Five cases of trephining for *intra-cranial traumatic hemorrhage* are recorded. In each instance the symptoms necessitating operation developed within twelve hours after the reception of the injury. Four of the five cases recovered not only from the operation but with the restoration of the suspended functions.

Of trephining for *acute* and *chronic hydrocephalus*, five cases are reported; all the cases died, one living to the forty-fifth day. As hydrocephalus is usually due to tuberculous disease or to morbid growths, it is difficult to understand on what ground such operations are undertaken.

Cephalalgia. In five cases the focus of pain was referred to the neighborhood of a scar on the scalp. In four, complete relief was afforded.

Seven cases are reported in which trephining was performed for *microcephalus*. Of these four died and three recovered from the operation. One of the deaths, however, was due to scarlet fever occurring shortly after the operation. The result in the successful cases is reported as moderate improvement. From the results obtained from the education of idiots, it was thought wiser to relegate these unfortunates to special training-schools rather than to the trephine and rongeur. The debatable cases would be those accompanied with athetosis, in which condition some improvement might be obtained.

Brain-tumors. Only four operations for brain-tumors have been performed by Philadelphia surgeons. In one the growth was a fibroma weighing four ounces. The operation was performed by Dr. Keen, December 15, 1887, since which time the patient has had only six epileptic seizures. In the second case, also operated on by Dr. Keen, the tumor was in the occipital lobe and not removable. The patient died on the following day from shock and hemorrhage. In the third case no tumor was found. In the fourth a cyst occupying the cuneus was found and emptied; the patient died in thirty-six hours. At the autopsy a large sarcoma was found occupying the temporo-sphenoidal lobe.

The following deductions were made:

1. In view of the late after-effects, all fractures of the skull attended with depression, however slight and entirely irrespective of symptoms, should be subjected to the trephine. 2. Trephining for traumatic epilepsy at best promises only palliation. 3. Trephining for Jacksonian epilepsy is to be regarded as only affording temporary benefit. 4. In view of the fact that all such cases left alone almost invariably terminate fatally, trephining for abscess is entirely proper; the earlier such operation is done the better. 5. Trephining for intra-cranial traumatic hemorrhage is both an imperative and highly promising operation. 6. Medicinal measures having failed, trephining for cephalalgia should be undertaken, with every prospect of success. 7. Trephining for hydrocephalus is a useless operation. 8. Trephining for microcephalus, independent of athetosis, confers no credit upon surgery. 9. It is more than probable that as our observations multiply, the sphere of the trephine as a preliminary for the removal of brain-tumors will be lessened rather than amplified.

In the discussion, MR. JOHN CHIENE, of Edinburgh, did not take the same somber view in regard to traumatic epilepsy as did Dr. Agnew. He referred to three cases in which decided benefit had followed operation. He fully agreed with what had been said in regard to operation in depressed fracture, whether or not symptoms be present. The cleansing of the scalp is a difficult matter, but may be accomplished by shaving and soaking with a carbolic lotion for three days. For opening the skull, he advised the gouge and mallet as safer than the trephine. For enlarging the opening the gouge-forceps fulfil a useful purpose. For puncturing the dura and the brain he uses a Graefe knife. Hemorrhage from the bone may be checked by plugging with a match-stick; bleeding from the brain by hot water. Stress was laid upon the necessity of constant observation of brain cases. In a case of supposed injury to the head (but which later proved to be a case of apoplexy), in which the patient was in a dying condition, great improvement, eventuating in practical recovery, followed trephining.

DR. W. W. KEEN, of Philadelphia, held that every case of depressed fracture, even in young children, should be operated upon. A blow upon the head, not sufficient to cause fracture, may produce laceration of the dura or of the cortex. In regard to linear fracture, however, he was disposed not to accept the view that operation should be performed. In regard to tapping of the ventricles, he thought that further experience and an improved technique would lead to better results. In epilepsy, he suggested the use of the bromides after an operation had been performed. In many cases of brain-tumor, in which there is no hope of removing the growth, great comfort may be afforded the patient by removal of bone.

DR. CHARLES B. NANCREDE, of Ann Arbor, reported cases in which cures had followed operation for traumatic epilepsy. In one the cure was of ten years' duration. Often, cases that are reported as failures soon after the operation prove to be cures when followed for a longer time. The operation removes only one of the elements causative of epilepsy. In speaking of these operations, he stated that hemorrhage from the skull could be checked by forcing in the diploë. In regard to simple fissured fracture, he asked how the diagnosis could be made.

DR. ROSWELL PARK, of Buffalo, differed from Dr. Agnew as regards the results of operation for epilepsy. He had himself had cases in which decided benefit was afforded. In order to determine the effect, time must elapse so that the epileptic habit may disappear. The operation removes the anatomical cause, but ordinary therapeutic measures are needed to counteract the secondary conditions. Reference was also made to the relief afforded in brain-tumors, even when the removal of the growth was not contemplated. He reported two cases of craniotomy for microcephalus in which benefit had followed.

DR. H. C. WOOD, of Philadelphia, thought it well to wait before coming to any conclusions as to the results of treatment, either medicinal or surgical. He referred to one case in which, under medicinal treatment, the attacks remained absent for seven years and then returned. In these cases he advised that before the contemplated operation was performed, a mock operation should be done and the effect noted. He cited cases in which such measures had been followed by benefit.

DR. J. J. PUTNAM, of Boston, thought that a simple, smooth, depressed fracture would not be likely to cause any symptoms. The irritation from a sharp spicule of bone would probably cause irritation. Probably the most important element in the causation of trouble is the result of the original injury to the cortex. The interstitial changes in the cortex take the form of sclerosis, and it seems, *à priori*, doubtful that the removal of the bone would materially affect the condition. The operation may not prove indifferent, for the cicatrization of the incised wound may lead to harm.

MR. THOMAS BRYANT, of London, had been much struck by the emphasis with which Dr. Agnew had insisted upon the treatment to be followed in depressed

fractures. As a practical rule, he was disposed to agree with him, but there are certain exceptions. He did not think it wise to encourage the practitioner to trephine and elevate in every case of depressed fracture. He could recall many cases of depressed fracture, followed for years, in which no symptoms appeared. Depression of the lateral surfaces of the skull are not so apt to be followed by symptoms as depression of the vault of the skull. From these remarks, he said, it would naturally follow that he disagreed with the observation that in every case of fissure of the skull operation should be performed. He wished Dr. Agnew had gone more thoroughly into the reason for this statement. If there have been no brain symptoms, although the blow may have been sufficient to cause fracture, it would not be wise to insist that we should at once proceed to explore, to see if there is fracture. It is better to wait and watch for symptoms, being ready to operate as soon as there is a suggestion of something wrong. Although the risk of exploratory operation may be slight, yet it must be admitted that such operation is attended with some danger.

In conclusion, Dr. Agnew said that in traumatic epilepsy he did not condemn operation, but curative results should not be expected from it. Its result is only one of amelioration. He could not withdraw his statement made in the paper, for in many of the cases of traumatic epilepsy there had been no history of unconsciousness or other symptoms; there had been a blow on the head and many years later epilepsy appeared. It is impossible to determine the condition of the internal table of the skull by inspection of the external table. He had seen a simple crack in the skull with the internal plate forced some distance downward.

A paper on "Resection of the Wrist," by Dr. Rafael Lavista, of the City of Mexico, was presented and read by title.

Dr. Stephen Smith, of New York, presented the Report of the Committee on the Results that Should be Considered as Satisfactory, of Treatment of Fractures of the Shaft of the Femur, which is elsewhere published in the current number of The Medical News.

Second Day—September 23d.

Dr. A. G. Gerster, of New York, read a paper on "Aseptic and Antiseptic Details in Surgery," the full text of which is to appear in *The American Journal of the Medical Sciences*. He stated that personal cleanliness, and cleansing of the field of operation, are to be accomplished by mechanical measures rather than by disinfectants. The dirt and oily matter of the skin are removed by emollient potash-soap and a stiff brush. Then a germicidal lotion is applied. The hands of the surgeon may be sterilized by first trimming the nails short, then for one minute scrubbing the hands with soap, brush, and hot water. The nails are then cleaned, and the hands immersed in strong alcohol, and then washed in 1 : 1000 corrosive sublimate solution. Brushes require careful attention. They may be sterilized by boiling for five minutes in water containing one per cent. of washing soda. They should be kept in 1 : 1000 bichloride solution. Instruments are sterilized by boiling for five minutes in a soda solution, in a covered vessel. The addition of the soda prevents the formation of rust. Dressings are rendered absorbent and sterilized by steam. Strong antiseptic agents in dressings are objectionable from their action on the skin. Dressings may also be sterilized by boiling in soda-lye or potash-lye. The use of Florida sponges was recommended, for, owing to their cheapness, they can be used once and then thrown away. Boiling of sponges is to be condemned; sponges are best prepared by beating, followed by immersion in dilute hydrochloric acid. The acid is removed by washing. The sponges are then immersed in water for ten days, to permit the spores to germinate. Each sponge is then kneaded in hot water for one minute, with potash-soap or soft soap, and then, for twenty-four hours, placed in a five per cent. carbolic solution. As a substitute for the large flat sponges used in laparotomy, Dr. Gerster recommended the substitution of pads of absorbent gauze.

In operating, as few instruments, sponges, and assistants as possible should be employed. The dissection should be clean, the tissues cut rather than torn. Irrigation should not be employed except when special indications are present. Irrigation of the abdominal cavity was condemned. When the peritoneal cavity is contaminated by pus, simply wiping away the matter is sufficient.

In perfectly aseptic operations, no drainage is required. Iodoform gauze can often be substituted for tubes. Drainage by tubes is required when there is progressive suppuration.

In combating septic morbid processes, mechanical measures, such as incision, drainage and irrigation, are of more importance than chemical measures.

In the discussion that followed, Dr. J. Collins Warren, of Boston, described the details of operative surgery as practised in the Boston City Hospital, the Massachusetts General Hospital and the Children's Hospital, of Boston.

Dr. J. William White, of Philadelphia, expressed the view that the time had not yet arrived when the use of antiseptics could be dispensed with. He preferred an antiseptic dressing in all cases except when the wound is absolutely sterile and when no discharge is to be expected. While, in a general way, he agreed as to the value of mechanical measures in cleansing the skin, he saw no good reason for entirely throwing aside the use of the weaker chemical solutions. There are so many cases in which one cannot be sure that the wound is aseptic that antiseptic dressings become of importance. He had tried gauze as a substitute for sponges in abdominal work, but had found it objectionable from the fact that when the gauze remains long in contact with the intestines threads of gauze adhere to the intestine.

Dr. Joseph Ransohoff, of Cincinnati, stated that in some cases it was absolutely impossible to render a part aseptic. In cases in which it becomes clear that the wound is infected, he removes the dressings and soaks the part in hot water. He had discarded the use of sponges altogether. In the majority of cases he employs the aseptic dressing, but could see no harm in the use of antiseptic dressings. In private practice, dressings may well be sterilized by heating in the oven. He thought that tight closing of the wound should be practised oftener than it now is. Drainage is rarely used except in wounds already septic. He often uses

catgut for drainage. In the septic cases, he thought that probably the surgeon was often responsible for the infection of the wound. By clean incisions, cutting far away from the disease, and by not using the sharp spoon too freely, infection of the wound in suppurating cases can often be prevented.

DR. E. M. MOORE, of Rochester, inquired as to the objections to irrigation. In amputation, for instance, irrigation with 1 : 1000 bichloride solution affords a ready means of removing clots, leaving the wound dry. If irrigation does no harm, why not use it? Dr. Gerster had condemned it, but he had failed to give reasons for such condemnation. In certain cases of abdominal section, especially when there was oozing of blood, the irrigations of hot aseptic water were of great service.

DR. GERSTER, in concluding, said that he did not condemn antiseptic methods. He employed both aseptic and antiseptic methods. In its proper place, asepticism is infinitely superior to antisepticism; but the cases must be properly selected. Teachers must be careful not to go too far in advance of the rest of the profession. Those who have not learned the details should be warned to adhere to the older methods, gradually approaching the higher.

DR. J. WILLIAM WHITE, of Philadelphia, read a paper on "The Surgery of the Spine." He considered congenital deformities, tuberculosis of the spine, neoplasms and traumatisms. Under the first head, spina bifida was the only condition requiring consideration. In this, injection of an iodo-glycerin solution offers the greatest prospect of ultimate recovery, with the least immediate danger. In tuberculosis of the spine, the indications for interference are the evacuation of pus, removal of a sequestrum or of a focus of carious bone, and relief of pressure on the cord. Fourteen operations upon the bodies of the vertebræ are on record, with eight cures; five cases improved, and one death from causes distinct from the operation. There have been forty cases of operation on the spine for the relief of pressure. In twenty-two there was either improvement or cure. The effect of suspension in the treatment of Pott's paralysis has been so favorable that it should occupy a preëminent position.

Dr. White formulated the following conclusions in regard to the operative treatment of spinal tuberculosis, with symptoms of pressure on the cord:

1. In Pott's disease the paralysis is not, as a rule, due to transverse myelitis or hopeless degeneration, and usually not to the pressure of carious or displaced vertebræ, but in the majority of cases is the result of an external pachymeningitis that gives rise to the formation of an extra-dural connective-tissue tumor.

2. Speaking generally, a favorable prognosis is to be given, especially in children, in cases of Pott's paralysis in which the abscess (if any exists) can be evacuated; the treatment by extension and with plaster-jackets can be employed, and the patient placed under the most favorable hygienic conditions.

3. In cases in which other measures have failed, in which the disease is slowly but steadily progressive, with loss of motion and sensation below the level of the lesion, with incontinence of urine and feces, and the development of bedsores, and especially when acute symptoms threaten life, resection becomes entirely justifiable.

4. Operation having been decided upon, the prognosis will be favorable in direct proportion to the youth and strength of the patient, the non-involvement of vital parts, and the absence of generalized tuberculosis.

5. When the tuberculous process affects the arches and there is paraplegia, operation may be undertaken in the hope of not only freeing the cord, but at the same time removing the focus of disease. This double indication may also be fulfilled in cases in which, without bone-disease, there is posterior pachymeningitis or a tuberculoma occupying the spinal canal.

6. If the lesion of the bodies of the vertebræ is in the lumbar region, at a point where these bodies are accessible, it might in certain cases be possible to expose the cord from the back by removing the laminæ, with the object not only of relieving pressure but of reaching and taking away the diseased bone and tuberbulous granulation.

7. In tuberculosis of the body of a vertebra and compression of the cord by anterior pachymeningitis, only one indication can be fulfilled—to liberate the cord from pressure. In grave cases, operation should be undertaken only when acute compression, the appearance of respiratory complications, the rapid development of degenerative processes urgently indicate interference, or when the course of a chronic case is steadily progressive toward a fatal termination, although no advanced visceral tuberculous lesions are present.

In regard to neoplasms it was stated that every case of focal spinal lesion, thought to be dependent on a tumor and not distinctly malignant and generalized, should be regarded as amenable to operative interference, no matter how marked or how long-continued the symptoms of pressure may be. The indications and contra-indications for trephining in spinal fractures are based on the following points: 1. The nature of the vertebral lesion and the nature and extent of the medullary lesion. 2. The time that has elapsed since the traumatism. 3. The regional level of the medullary lesion.

The following conclusions were presented:

1. Some objections urged against operative interference in spinal traumatisms—*i. e.*, hemorrhage, frequency of absolute destruction of the cord, pressure from inaccessible fragments of bone, etc.—have been shown to be unsupported by clinical facts; others were largely due to a well-founded dread of (*a*) the shock in those cases operated on in pre-anesthetic times, and (*b*) consecutive inflammation, suppuration, and pyemia in pre-antiseptic periods.

2. Some results of recent operative interference in properly selected cases of fractures of the spine are encouraging, and should lead to the more frequent employment of resection of the posterior arches and laminæ: (*a*) in all cases in which depression of those portions either from fracture or dislocation is obvious; (*b*) in some cases in which, after fracture, rapidly progressive degenerative changes manifest themselves; (*c*) in all cases in which there is compression of the cauda equina from any cause, whether from anterior or posterior fracture, or from cicatricial tissue; (*d*) in the presence of characteristic symptoms of spinal hemorrhage, intra-medullary or extra-medullary.

3. Operation is contra-indicated by a history of such severe crushing force as would be likely to cause dis-

organization of the cord. The question that will remain in doubt previously to operation will usually be that of the extent of damage done to the cord and the possibility of its taking on a reparative action. As to this, the safest rule is that which has been formulated by Lauenstein, namely, that if, after the lapse of from six to ten weeks, there is incontinence of urine or incontinence of feces, and especially if extensive bedsores develop, but little is to be hoped for from the unaided efforts of Nature. If, however, these symptoms are absent, and if there be the least improvement, it will be proper for the surgeon still longer to delay operative interference.

In the discussion that followed, DR. H. H. MUDD, of St. Louis, dwelt upon the importance of remembering the likelihood of severe shock in these spinal operations. He reported three cases of bullet-wounds of the spinal column, one of which ended fatally.

DR. JOHN B. ROBERTS, of Philadelphia, insisted that injuries and diseases of the spine of a surgical kind should be treated as injuries of the cranial cavity are treated. Cases of Pott's disease with angular curvature have been referred to, but sufficient stress has not been laid upon the fact that many of these cases with motor paralyses improve under ordinary remedies, the inflammatory exudation being absorbed. In case of traumatism the spine should be explored as the brain is explored. In severe injuries, with fracture, spicules of bone are often driven down upon the cord.

DR. J. J. PUTNAM, of Boston, feared that the dangers of inflammation had not been sufficiently dwelt upon. After from one to four years some cases of spinal injury show some improvement. In such cases an operation may add to the improvement.

DR. JAMES MCCANN reported two cases of spinal injury in which operation had been performed. In one, death followed. In the other there was great improvement.

DR. N. SENN, of Chicago, presented the following conclusions upon "The Treatment of Tuberculosis of Bones and Joints by Parenchymatous and Intra-articular Injections."

1. Parenchymatous and intra-articular injections of safe anti-bacillary substances are indicated in all subcutaneous tuberculous lesions of bones and joints accessible to this mode of treatment.

2. Of all the substances so far employed in this method of treatment, iodoform has yielded the best results.

3. The curative effect of iodoform in the treatment of local tuberculosis is due to its anti-bacillary influence, and its stimulating action on the healthy tissue adjacent to the tuberculous focus.

4. A 10 per cent. emulsion in glycerin or pure olive oil is the best form in which to administer iodoform subcutaneously.

5. The ethereal solution should never be employed, as it is liable to cause iodoform intoxication, or necrosis of the tissues overlying the abscess.

6. Tuberculous abscesses and joints containing synovial fluid or tuberculous pus should always be thoroughly washed out with a 3, 4 or 5 per cent. solution of boric acid before the injection is made.

7. Injections should be made at intervals of one or two weeks, and their use persisted in until the indications point to the cessation of the tuberculous inflammation and the substitution for it of a satisfactory process of repair, or until the result of this treatment has shown its inefficacy and indications of the necessity of resorting to operative interference present themselves.

8. If the treatment promises to be successful, symptoms pointing to improvement manifest themselves not later than after the second or third injection.

9. In tuberculous empyema of joints, and in tuberculous abscess, gradual diminution of the contents of the joint-abscess at each successive tapping, with a lessening of the solids contained in the fluid, and increase in its viscidity, are the conditions that unerringly indicate that the injections are proving useful, and that in all probability a cure will result from their further use.

10. Moderate use of a limb is compatible with this method of treatment, provided the disease has not resulted in deformities that would be aggravated by further use of the limb. In such cases, correction of the deformity should be postponed until the primary joint-affection has been cured by the injections.

11. Parenchymatous and intra-articular medication, with anti-bacillary material, has yielded the best results in tuberculous spondylitis attended by abscess-formation and tuberculosis of the knee-joint and wrist-joint.

12. This mode of treatment may prove successful in primary osseous tuberculosis, followed by involvement of the joint, provided the osseous foci are small.

13. Extensive sequestra of articular ends, with secondary tuberculous synovitis, always necessitate resection, but preliminary treatment with iodoform injection into the affected joints, constitutes a valuable procedure preparatory to the operation, and adds to the certainty of a favorable result.

14. In open tuberculous affections of joints, incision, scraping, disinfection, iodoformization, iodoform-gauze tampon, suturing, and subsequent injection of iodoform emulsion are advised, and yield excellent results. They should be employed in all cases in which a more formidable operation can be avoided.

15. Balsam of Peru ranks next to iodoform in the treatment of tuberculous affections of bones and joints. If for any reason iodoform cannot be employed, or has failed in effecting the desired result, balsam of Peru should be given a fair trial, if operative treatment is not urgently indicated.

THIRD DAY—SEPTEMBER 24TH.

At the Executive Session the following officers were elected for the ensuing year:

President.—Dr. Phineas S. Conner, of Cincinnati.

Vice-Presidents.—Dr. L. McLane Tiffany, of Baltimore; Dr. Levi C. Lane, of San Francisco.

Secretary.—Dr. J. R. Weist, of Richmond, Ind.

Recorder.—Dr. J. Ewing Mears, of Philadelphia.

Treasurer.—Dr. John B. Roberts, of Philadelphia.

Member of Council.—Dr. Claudius H. Mastin, of Mobile.

The following resolution was adopted: *Resolved*, That the Association hereafter hold each triennial meeting at Washington, and that other annual meetings be held at such time and place as the Association may name.

It was decided to hold the next meeting in Boston, in June, 1892.

The following were elected to membership:

Dr. J. S. Wight, of Brooklyn; Dr. E. W. Walker, of Cincinnati; Dr. George R. Fowler, of Brooklyn.

The following honorary members were elected:

Mr. John Chiene, of Edinburgh; Mr. Reginald Harrison, of London; Mr. Thomas Bryant, of London; Mr. Arthur Edward Durham, of London.

DR. FREDERIC S. DENNIS, of New York, read a paper on "Recurrence of Cancer of the Breast." In all the cases considered a microscopical examination of the tumor had been made. Carcinoma is a disease of civilization. Seven thousand deaths occur annually in England from carcinoma, the breast being most commonly involved. In 75 per cent. of cases recurrence follows operation, including operations in which the axilla has not been opened. The primary neoplasm is local. Early and complete removal of the growth relieves the local disease, but does not overcome the predisposition or susceptibility or the capability of recurrence.

1. The recurrence of carcinoma of the breast is influenced by the interval of time between the appearance of the growth and the operation. The best results are obtained when the operation is performed early, particularly before involvement of adjacent glands has taken place.

2. Recurrence is influenced by the extent of secondary involvement, either by the blood-stream, by the lymphatics or by contiguity of structure.

3. Recurrence is influenced by the character of the operation. Complete removal of the breast is essential for permanent cure. Not only the breast, but the adjacent glands as well must be removed. In the seventy-one cases of Dr. Dennis there was but one death, and that was from hemorrhage in a case of hemophilia.

4. Recurrence is influenced by the histological character of the growth. The less typical the growth, the more unfavorable the prognosis. The more embryonic the structure, the greater the chance of recurrence.

5. Recurrence is influenced by the condition of the second breast. This is involved in 5 per cent. of cases. In these patients recurrence is likely.

6. Recurrence is influenced by the personal equation, including age, sex, marriage, fecundity, sterility, pregnancy, traumatism, heredity, menstruation, metastasis, mental condition, locality, etc.

In nearly all of the seventy-one cases reported, the axilla was opened, the entire breast was removed, together with all contiguous skin, the para-mammary and peri-mammary fatty areolar tissue, the pectoral glands, the pectoral fascia and the axillary glands and axillary fatty tissue. In some cases the supra-clavicular glands were removed, and in one case a number of the ribs were excised. The percentage of permanent cures reached 30 per cent.

Dr. Dennis held that with early and radical operation, recurrence of carcinoma of the breast should be comparatively rare.

MR. THOMAS BRYANT, of London, believed firmly in the local origin of carcinoma, although it must be admitted that there may be a predisposition to the development of the disease. Many cases do not come under observation until the disease is well advanced, because the patient imagines that a condition unassociated with pain cannot be carcinoma. When induration appears in a breast during the period of functional activity, there may be some hesitation in the diagnosis, but in some thirty cases of this kind in which immediate operation was performed, the disease was shown to have been malignant. In none has recurrence taken place. When the disease has advanced somewhat further, with dimpling and puckering of the skin and some immobility, a thorough operation may accomplish good results. In some cases there is no recurrence for from five to twenty years. In the more advanced cases the surgeon should limit his operations to those in which there is a reasonable prospect of removing all of the diseased structure. Mr. Bryant does not remove the axillary glands in every case. If the glands are enlarged or the disease extends toward the axilla he thoroughly removes the glands. If the disease is quite local and there is no evidence of axillary involvement, the axilla is not opened. In the atrophic form of carcinoma he though it better not to interfere, unless the tumor was a source of great inconvenience. In these cases operation is often followed by a more rapid form of growth. Again, in cases of carcinoma in which the lymphatics can be traced distinctly and the breast has a brawny feel—the lymphatic form of carcinoma—the surgeon does no good by interference.

SIR WILLIAM MACCORMAC, of London, thought that the axilla should always be opened in operations for carcinoma of the breast, for two reasons, viz.: (1) In 117 cases of carcinoma of the breast, examination showed that in all but 2 the axilla was involved; (2) In 90 per cent. of the recurrences the disease appears in the axilla.

DR. LEWIS S. PILCHER, of Brooklyn, thought that the term "recurrence" was not applicable to many of these cases, as the condition was simply one of continuance of the former growth. If a case goes for a year without the appearance of the disease, it may be considered that the disease has been removed; if it appears later, it can be regarded as recurrent, a renewed or a new attack of carcinoma. As in every case of carcinoma there is a predisposition to the disease, in addition to operative measures an agent should be sought to counteract this constitutional predisposition. Arsenic has, for many years, been used for this purpose. Dr. Wight, of Brooklyn, has suggested the use of carbonate of lime for the same purpose.

DR. L. MCLANE TIFFANY, of Baltimore, did not think that any limit could be set to the time at which recurrence might take place. He had seen the disease return eight years after operation. He firmly believes in the local origin of carcinoma. The time at which the disease is discovered by the patient bears no relation to the time of its commencement. Too much stress cannot be laid on the necessity for thorough operation. In only two cases, of eighty operations for cancer of the breast, had he found the axillary glands not enlarged. The pectoral fascia and at times portions of the muscle should be removed.

DR. KINGSTON, of Montreal, believed that carcinoma was essentially a local disease. Believing this, operation should be performed at as early a date as possible. The glands should be removed not only from the axilla, but if they are enlarged also from its neighborhood. If there should be recurrence the operation should be repeated as often as circumstances seem to warrant.

DR. JOSEPH RANSOHOFF, of Cincinnati, reported thirty

cases of removal of the breast for carcinoma, without a death. He thought that the danger of the operation was not materially increased by opening the axilla.

Dr. C. B. Nancrede, of Ann Arbor, said, with reference to the three-year limit, that this had been proved to exclude ninety-eight per cent. of the recurrences. It is impossible to tell whether or not the axillary glands are involved without opening the axilla. Unless this is done the majority of cases will be left unbenefited. He advised that the axilla be opened first, and if the glands could not be removed, to close the wound and not remove the breast.

Dr. J. R. Weist, of Richmond, Ind., had operated fifty-five times for carcinoma of the breast, and makes it a rule to open the axilla in every case.

Dr. George W. Gay, of Boston, would not admit the local origin of carcinoma. When it can be shown that a carcinoma, once removed, will not return, just as a fatty tumor when removed does not return, then the local origin of carcinoma can be accepted.

Dr. Edward M. Moore, of Rochester, always operates in as thorough a manner as possible. He always opens the axilla, and does not think that he thereby adds to the risks of the operation. He did not agree with Mr. Bryant in regard to the atrophic cases in old individuals. In these he recommended operation, considering recurrence very improbable. He reported one case, now seventy-nine years of age, living seventeen years after the operation.

Dr. C. B. Porter, of Boston, reported "A Case of Diffuse Fibroma with a Tendency to Intra-canalicular Growth of Both Breasts," in which for three years the breasts had undergone gradual enlargement, the increase in the last three months, however, being rapid. The greatest circumference of the right breast was 38 inches; the length from the chest-wall to the nipple, 17 inches; the circumference of the base, 23 inches. The greatest circumference of the left breast was 28 inches; the length from the chest-wall to the nipple, 14 inches; the circumference at the base, 23 inches. Throughout both breasts were felt hard, movable masses of irregular outline, varying in size from an orange to a closed fist. The left breast was first removed. It was transfixed at the base with two skewers and constricted below this by means of a tightly-drawn rubber tourniquet. But little blood was lost. Three weeks later, the right breast was removed. Twenty days after the second operation the patient was permitted to leave the hospital. A week later she developed erysipelas. This had improved in four days, when she suddenly aborted a four-months' fetus.

The weight of the right breast after removal was 43 pounds and that of the left 17 pounds.

Dr. J. M. Barton, of Philadelphia, reported a similar case, in which only one breast was removed.

(To be continued.)

AMERICAN GYNECOLOGICAL SOCIETY.

Sixteenth Annual Meeting, held at Washington, September 22, 23, and 24, 1891.

First Day—September 22d.

Dr. Joseph Taber Johnson, of Washington, delivered an Address of Welcome.

The first paper was presented by Dr. John C. Reeve, of Dayton, Ohio, on "The Advantages of Mixed Narcosis in Gynecological Surgery." There are special features of many operations of gynecology, abdominal and plastic, that require the most profound and uninterrupted anesthesia for their successful performance. This condition is assured by the hypodermatic injection of morphine and atropine before the inhalation. For more than twenty years Dr. Reeve has resorted to this procedure in every operation of notable duration or severity.

The advantages of the method consist in the facility of production of anesthesia; steadiness of its maintenance; profoundness; and diminution of struggling in the early stages, and of vomiting afterward.

The great point in artificial anesthesia is danger. The speaker adduced the points in support of the superior safety of the mixed method: 1. The emotional state is nearly abolished by the narcotics. 2. A much smaller quantity of the anesthetic is required. 3. A shortened and diminished struggling stage. 4. The stimulating influence of atropine upon cardiac action and respiration. 5. The effect of morphine in lessening reflex inhibition. 6. Experiments upon animals.

Finally, the question of the combination of the narcotics with ether was considered, since almost all experience had been with chloroform as the anesthetic. The speaker had exclusively used the A. C. E. mixture, which is one-half ether. His experience with the method had been unbroken by accident or by threatening of danger. He had used it in one patient that under a previous administration had the narrowest escape he ever saw under anesthetics, and there were no disturbing symptoms.

In none of the few cases in which death had occurred was this sudden and typical of death under anesthetics. In every instance the fatal termination took place some hours after the administration.

Dr. Warren Sawyer, of Chicago, stated that he had found mixed narcosis valuable in preparing patients for the application of the forceps, or other minor obstetrical procedure.

Dr. J. M. Baldy, of Philadelphia, stated that he had employed mixed narcosis, with ether as the anesthetic, but when he could have full personal control of the preparation of the patient for operation he had not found any essential difference between simple and mixed narcosis. He believed that most of the struggling of the patient during the anesthesia was due to gastro-intestinal irritation, and when he had cleared out the gastro-intestinal tract prior to the operation, the patient had remained just as passive as in the cases in which he had used mixed narcosis. He had seldom seen vomiting after ether-narcosis.

Dr. William T. Howard, of Baltimore, was strongly in favor of ether as an anesthetic because it took a much smaller amount to anesthetize a patient and the struggling was less. He believed that, although ether caused less nausea than chloroform, neither secured immunity from vomiting, and he was glad to hear of the good results of mixed narcosis.

Dr. John Byrne, of Brooklyn, had used mixed narcosis for many years, with ether as the anesthetic, and believed that all the good effects claimed by Dr. Reeve could be obtained as well when ether was used as the anesthetic, instead of the A. C. E. mixture.

DR. HENRY C. COE, of New York, read a paper entitled "Accidental Hemorrhage occurring During the First Stage of Labor, at Term." He considered only the hemorrhage occurring during labor. This is not only the more infrequent but the more fatal form, and is rarely of traumatic origin.

The etiology of these cases is obscure: traumatism is the most frequent factor before labor; the predisposing causes are a hemorrhagic diathesis, general febrile affections, renal troubles, death of the fetus, hydramnios, and diseases of the placenta. Irregular uterine contractions have been noticed in 20 per cent. of cases. In a certain number of cases the cause was undoubtedly abnormal shortness or twisting of the cord. In non-traumatic cases the accident cannot be ascribed to a single etiological factor; there is usually a combination of several. It is impossible in a given case to predict what combination may lead to hemorrhage.

There are two sets of symptoms—initial and final. Most writers affirm that the latter are alone reliable and are recognized too late for successful interference. Dr. Coe believes that it is possible to diagnosticate accidental hemorrhage at its inception by careful attention to the initial phenomena, especially irregularity and feebleness of the labor-pains. Sometimes the pains are strong and then die away; in many cases they are feeble from the outset. The patient complains of continuous pain in the lower part of the abdomen, which gradually grows worse and assumes a rending character. External palpation may at first reveal nothing abnormal; auscultation of the fetal heart shows it to be feeble and irregular. The patient may be restless and irritable, but able to sit up and walk about; her pulse is not affected, so that the ordinary observer may mistake the case for one of simple uterine inertia. External bleeding has been absent in three-fourths of the cases reported. Its occurrence should be regarded as a confirmation of a diagnosis already made. The patient's pulse and general appearance now indicate internal hemorrhage; the labor is entirely arrested; she grows weaker, collapses, and may die; or, after rupture of the membranes, strong pains may come on and the woman may be delivered, only to succumb to post-partum hemorrhage, if not to shock. In not a few instances death seems to be due to over-distention of the uterus rather than to actual loss of blood.

The condition might be mistaken for a severe attack of colic, but hardly if the condition of the uterus was carefully observed. It is distinguished from rupture of the uterus by the fact that rupture occurs during the progress of active pains, usually before the rupture of the membranes, and is followed by a diminution rather than an increase in the size of the uterus, by recession of the presenting part, and by the sudden onset of the symptoms of internal hemorrhage. In case of uterine atony dependent upon hydramnios, a quantity of liquor amnii escapes when the presenting part is returned.

The prognosis is dubious; it varies according to the time at which the accident is recognized, the degree of shock, and the character of the labor-pains. The child is likely to be lost. If the pains are fairly strong, the uterus not over-distended, the cervix dilatable and the head engaged, the patient ought to be saved. If she is in collapse, the uterus distended and absolutely inactive, and the cervix is rigid, so that time is lost in dilating it, the outlook is bad. When delivery is effected there is great danger of post-partum hemorrhage, which may destroy the patient, already exhausted.

There is a want of unanimity with regard to the management of these cases. Some advise an immediate delivery; others, delay. Dr. Coe disapproved of the practice of rupturing the membranes and administering ergot when there was no prospect of immediate delivery. It might cause the uterus to contract, but it did not overcome the obstacle to delivery, and might be a cause of a continuation of the hemorrhage. Dr. Coe's plan of treatment was as follows: As soon as the accident was recognized, the patient is vigorously stimulated by mouth, rectum, and hypodermatically, and assistance sent for. Under complete ether-anesthesia the os should be carefully dilated manually, Barnes's bags only being employed when the os is rigid and the patient's condition such that a certain amount of delay could be safely permitted; the membranes should be preserved intact; then version should be performed, with unusual care to avoid rough manipulation. At this stage ergot should be freely administered hypodermatically. There should be a short delay before extraction in order to give the uterus time to recover its tone.

If the head is arrested by the poorly-dilated os, it should be perforated instead of wasting time in trying to drag it out. The most important step is the prevention of post-partum hemorrhage. Instead of losing time by employing the ordinary agents, ice, hot water, astringents, electricity, etc., the hand should be introduced into the uterus, the placenta and clots removed, and the cavity at once tamponned with iodoform gauze. This will promptly arrest the hemorrhage, even if the uterus does not contract.

DR. EDWARD W. JENKS, of Detroit, presented a paper entitled, "The Therapeutic Aspect of Some Ovarian Disorders." He stated that, notwithstanding the brilliant achievements of abdominal surgery within the past few years and the large percentage of recoveries after successful operations on the ovaries and Fallopian tubes, there remains a dark spot on the face of perfection. Unfortunately, to operate and to cure have not ever been synonymous terms. There are, undoubtedly, many fatal cases of laparotomy of which, not being published, the medical world has no knowledge. There are also many instances of recovery from operations in which the patient is not benefited in the least.

Dr. Jenks entered a strong protest against the wholesale removal of ovaries by everyone considering himself capable of wielding a knife or tying a ligature. Operation for the relief of pain and for mental disorders, in anemic, neurasthenic and hysterical women frequently fails to accomplish the object sought for.

Upon the statements of many laparotomists it can be safely said that ovaries and tubes have been removed for pain or other symptoms when neither macroscopic nor microscopic examination indicated any diseased condition, and the patient was restored to health in consequence.

A simple catarrh of any mucous tract in the body, if neglected, often advances to the purulent stage, and Dr. Jenks had no doubt that in not a few cases operated upon in which pus was found in the tubes, the fluid was simply a slightly muco-purulent secretion, the result of

an undiscovered or neglected catarrhal salpingitis, which, in its earlier stages, would have been amenable to treatment by ordinary therapeutic measures. The fearful frequency of gonorrheal salpingitis has caused many to overlook the fact that there is any other variety.

While Dr. Jenks fully appreciated the feats of abdominal surgery, he believed it finer science to restore an organ to moderate usefulness and comfort than to remove the offender; but if treatment by ordinary therapeutic means could not bring about the necessary repair, then he would remove the organ without delay. He believed that some of these cases had a malarial origin, and he had accordingly treated some of them with success.

Contrasting the rich and the poor, there is in these cases an exception as regards women of the poorest class. They cannot afford a long period of semi-invalidism. They do not complain of sterility, as they generally have more children than they can take care of. The quickest possible amelioration of their troubles is the thing desired; therefore an operation should be performed at once after it has been decided that the tubes and ovaries are hopelessly diseased. On the other hand, in the case of the rich, who can afford to wait, time and judicious treatment will often bring about the desired result. The uterine sedatives, such as viburnum, piscidia, apiol, some of the coal-tar preparations, bromides, etc., are serviceable in quite a variety of conditions. Electricity is valuable as a general nerve-tonic for the relief of pain, and the dissolution of pelvic exudates and adhesions. Local treatment consists in painting the entire vaginal vault with a saturated solution of tincture of iodine, and keeping up continuous pressure by means of wool tampons.

Dr. J. M. Baldy, of Philadelphia, presented a paper entitled, "Insanity Following Gynecological Operations." A careful inquiry from the heads of eight hospitals for the insane throughout the country, as to whether any female patients were admitted during the past five years on whom laparotomy was performed and insanity followed, resulted in the following: Of a total of 15 cases, there was in 11 preëxisting insanity, and the operation was undertaken in the main for the cure of the mental condition. In four cases insanity followed the performance of laparotomy.

Mental disturbances follow gynecological operations more frequently than is supposed. When there is an inherited tendency to mental disease, laparotomy should only be undertaken with an understanding of the possible outcome.

Dr. Jos. E. Janvrin, of New York, read a paper entitled, "A Clinical Study of Primary Carcinomatous and Sarcomatous Neoplasms Between the Folds of the Broad Ligaments, with a Report of Cases." He stated that malignant neoplasms other than those of the ovaries sometimes do occur *primarily* between the folds of the broad ligaments, and related the history of three cases, one of sarcoma of the Fallopian tube, the second of primary carcinoma of the parovarium, and the third of cystic angio-sarcoma of the left broad ligament, with a lipoma of the right, and with dilated tubes.

The history of all three of the cases pointed plainly to the primary development of malignant growths, two sarcomatous, and one carcinomatous, within the folds of the broad ligament.

Than the second, Dr. Janvrin knows of no other recorded case of an adenoid hypertrophy in the parovarium undergoing degeneration and transformation into carcinoma; he also believes that there is no other recorded case of a primary carcinomatous development within the folds of the broad ligament, excluding those that develop in the ovary proper.

Dr. William H. Parish, of Philadelphia, read a paper entitled "The Present and Improving Status of Cæsarean Surgery," by Dr. Robert P. Harris, of Philadelphia.

Dr. Harris regards the new Cæsarean operation, *per se*, in the hands of a skilful operator and with the woman in good condition, as one of a moderate degree of risk. His personal experience covers 13 cases, with only two deaths.

The greatest obstacle to the success of Cæsarean surgery, more especially in the United States, is that cases are not brought to the obstetric surgeon until the risk of using the knife has been greatly increased by the effects of labor and attempts at delivery. Of the eighteen true Porro cases in the United States, the fetuses were already dead in eight before the knife was resorted to. The records of the most successful work in Europe show how intimate has been the connection between the living fetus and the subsequently-saved mother. The saving of the woman must thus begin with the management under the obstetrician first consulted. If he should happen to know the requirements for Cæsarean success, the case will probably be so managed as to attain it; otherwise the result may be decidedly adverse before he is fully aware of the necessities of the case.

Dr. H. Marion Sims, of New York, reported a "Unique Case of Multiple Neuro-lipomata Following Laparotomy," in which he excised the hymen for vaginismus, with a disappearance of the nervous symptoms. Eight months later, in the seventh month of pregnancy, the woman was seized with violent convulsions. The patient complained of violent pain in the left ovarian region. Examination revealed an enlarged cystic ovary jammed tightly between the uterus and the abdominal wall. Pressure caused excruciating pain.

The patient was made tolerably comfortable by inhalations of amyl nitrite up to the time of labor, when it was thought that she would be free from her hystero-epileptic attacks, by the removal of the pressure of the gravid uterus upon the ovary. Shortly after delivery, which was uneventful, the attacks came on with renewed violence, the other ovary also now showing signs of cystic degeneration. Her condition had become so distressing that laparotomy was performed. The convulsions entirely disappeared, and the woman made a good recovery.

Six months later the woman was again seized with intense circumscribed abdominal pain; the lightest touch caused the most acute pain. After considerable difficulty, a little tumor that felt like a large duck-shot was removed from the abdominal wall. On the following day, other growths in the abdominal wall were removed. Microscopical examination showed them to "consist of hardened fat and connective tissue, with a tiny nerve-filament running through the whole, and seemingly tightly in the grasp of the tumor itself."

Despite repeated removal the growths recurred, resisting all therapeutic measures. At the end of the second

year the growths showed evidence of disappearing, and in the thirtieth month from the first appearance of the growths, the last was removed, not to return. The woman has now enjoyed good health for three years, warranting the hope of permanent cure.

(To be continued.)

AMERICAN DERMATOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

THE meeting was called to order by DR. F. B. GREENOUGH, of Boston, who delivered the President's Address.

The first paper read was by DR. H. G. KLOTZ, of New York, entitled "Dermatitis Hemostatica."

DR. L. A. DUHRING, of Philadelphia, followed with a paper, "Report of a Case of Universal Erythema Multiforme," accompanied by a colored portrait of the case and specimens of large plates of exfoliated epidermis shed during the course of the disease.

DR. SHEPHERD, of Montreal, asked if any drug had been administered for the rheumatism that was a marked feature in the case, to which Dr. Duhring replied, "No. The treatment had been entirely negative."

DR. FOX, of New York, had seen a case somewhat resembling that of Dr. Duhring, in which there was a question as to whether or not the eruption had been caused by some drug that had been taken for a coexisting gonorrhea. He thought that it was a purely accidental occurrence, as exfoliation of the skin is often seen after other diseases, such as psoriasis.

DR. SHEPHERD, of Montreal, reported a case of "Sarcoma of the Arm Involving the Skin," for which amputation was performed. The patient was a healthy man, aged thirty-five years; no history of syphilis. A small nodule appeared two years previously over the ulna; this was at first movable; soon other nodules appeared, became attached to the skin, and finally ulcerated, the ulcers afterward fusing together, forming one huge, irregular ulcer, with sharply cut, indurated edges and sloughing base, having very much the appearance of a syphilitic ulceration. In a short time the chains of nodules, large and small, were seen extending along the inner side of the biceps muscle from the bend of the elbow to the axilla; they evidently followed the course of the lymphatic trunks. Some of these nodules were excised and pronounced by the pathologist of the hospital to be spindle-celled sarcoma. The growth apparently originated in the cutis, and the structures earliest involved were the lymphatics. The pain, which was most severe, occurred chiefly at night, and antisyphilitic remedies were for a time employed, but with no permanent benefit. Owing to the increasing ulceration, which rendered the arm useless, and the intense pain, the arm was amputated at the shoulder-joint. The axilla was found full of infiltrated glands that closely embraced the bloodvessels. The man remained well for a year, when there was great pain again and recurrence of the growth in the stump. This growth was excised, without much relief from the pain, however, so that later Dr. Shepherd resected the cords of the brachial plexus above the clavicle, with the result that since that time (three months) the pain has been completely relieved. The most interesting point in the case is the early, rapid, and extensive involvement of the lymphatics—an unusual course in sarcoma. Melanotic sarcoma not infrequently involves the lymph glands early, but not other varieties of sarcoma.

This was followed by a paper by DR. S. SHERWELL, of Brooklyn, upon "Multiple Sarcomata: History of a Case Showing Modification and Amelioration of Symptoms with Large Doses of Arsenic."

Dr. Sherwell removed in all from this patient thirty growths, some of which were quite large, one three and three-quarter inches in diameter. Dr. Wheeler about a year later, in a series of operations, removed the immense number of one hundred and seventy, large and small. In the interval between leaving Dr. Sherwell's care and coming under that of Dr. Wheeler, the patient had interrupted or almost suspended treatment with large doses of arsenic, which had caused the complete or almost complete disappearance of all growths. They recurred so rapidly that Dr. Wheeler adopted the same internal treatment that Dr. Sherwell had instituted, with the most decided and gratifying results, namely, the same rapid disappearance of the growths. The case, however, neglected treatment and died in a few months.

In the discussion, DR. ZEISLER, of Chicago, mentioned brilliant results in a case of lupous sarcoma from the administration of arsenic. In a case of pigmentary sarcoma he had given the drug without effect.

DR. J. C. WHITE, of Boston, had seen good effects from the use of the drug in one case of sarcoma.

DR. ROBINSON, of New York, had not had much success with arsenic. He believed that many cases of so-called multiple sarcomata were in reality microbic in origin and not true tumors.

The next paper read was by DR. R. B. MORISON, of Baltimore, on "The Hypodermatic Use of Hydrargyrum Formamidatum in Syphilis," which will appear in a later number of THE MEDICAL NEWS.

In the discussion, DR. CORLETT, of Cleveland, said that he had found hypodermatic injections of mercury of great use in some cases, such as those cases in which the stomach was rebellious.

DR. KLOTZ, of New York, had employed hypodermatic injections in syphilis. While they are doubtless of value, in most cases older methods of treatment are quite as good.

DR. GREENOUGH, of Boston, said that while greatly interested in the subject of hypodermatic medication in syphilis, he had found it impossible to get his patients to submit to it. He thought that it was useful only in exceptional cases in which other plans could not be used. Its ultimate result was no better than that of other plans.

DR. JOSEPH GRINDON, of St. Louis, Mo., read a paper entitled "A Case of Lichen Scrofulosorum." In this case the lesions were collected in groups and segments of rings extending over both scapular regions; they were miliary in size, firm, and in many instances pierced by hairs. Scattered among them were acne lesions. The picture, taken as a whole, was an almost exact counterpart of that of a small miliary papular syphilide.

The case was reported: 1st. On account of the rarity of the disease, not over a half-dozen cases having been

reported in the United States and Canada to date; 2d. The age and sex (female, twenty-two years) being unusual; 3d. Because of the further surprising fact that the family history and hygienic surroundings of the patient were of the best.

(To be continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

Sixth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

THE PRESIDENT, DR. WILLIAM PEPPER, opened the meeting with an address in which he spoke feelingly of the members who had been removed by death since the last meeting. Dr. Fordyce Barker and Dr. Joseph Leidy, both of whom are honorary members, were especially eulogized. In a few well-chosen remarks a cordial welcome was extended to the members of the Association and invited guests.

By a unanimous vote, DR. WILLIAM P. NORTHRUP, of New York; DR. ANDREW H. SMITH, of New York; DR. AMOS L. MASON, of Boston; and DR. A. MCPHEDRAN, of Toronto, Canada, were elected members of the Association.

The discussion on "The Treatment of Visceral Tuberculosis by Koch's Method" was opened by DR. F. P. KINNICUTT, of New York City.

From December 10, 1890, to June 1, 1891, Dr. Kinnicutt had inoculated 40 cases with tuberculin. The cases were classified as follows: Pulmonary tuberculosis, 13; laryngeal tuberculosis, 7; lupus, 6; tuberculosis of joints, 5; tuberculous adenitis, 4; tuberculous affections of bones, 2; tuberculosis of the prostate, 2; tuberculous epididymitis, 1; rodent ulcer, 1; for diagnosis only, 8. Only the pulmonary and laryngeal cases were dwelt upon.

Dr. Kinnicutt urged the necessity of using fresh solutions of tuberculin. One milligram was the maximum beginning dose; in some cases only one-half this amount was administered, the dose being gradually increased as tolerance was established.

He divided the pulmonary cases into (*a*) notable improvement in the local and general conditions; (*b*) no improvement, or result variable; and (*c*) distinct deterioration. The following are the conclusions reached:

The occasional harmful action of the remedy is recognized. It possesses marked affinity for tuberculous tissues. It does not confer immunity when injected into healthy bodies, but in some cases it seems to predispose to contagion or to light up a latent trouble. He does not consider the constitutional symptoms necessary to the beneficial action of tuberculin, but believes that the remedy is a very complex body, and that the efficient therapeutic principle is separate and distinct from that causing the constitutional manifestations, which he maintains are harmful rather than otherwise.

The use of tuberculin in pulmonary tuberculosis is useful only in the earliest stages of the disease. The establishment of tolerance differs widely in different cases. In incipient cases the remedy is apparently capable of exciting pneumonic processes; and in localized tuberculous pleurisy, a general pleurisy may follow its use.

Hemoptysis during the administration of the remedy is rare. Dr. Kinnicutt concludes that the remedy is useful in certain varieties of cases.

DR. HAROLD C. ERNST, of Boston, continuing upon the same subject, gave the result of his experience. He did not think the best results from tuberculin have been yet attained, but that the future may demonstrate some modification of the present remedy, or that something to which this may lead will yield valuable assistance in the treatment of tuberculosis. Of twelve cases of marked pulmonary tuberculosis, five were reported as relieved. He could not report any as cured. There were no deaths.

Of twenty-two surgical cases, two were much relieved; twelve were not relieved; and two died. The remainder, including such cases as lupus, and joint and glandular affections, were relieved. Here, again, no cases were cured. In a general way, the number of bacilli in the sputum bears some relation to the condition of the patient. He has observed marked and rapid improvement in some cases of tuberculosis, especially the external forms.

Dr. Ernst concludes that tuberculin does not possess any diagnostic value, so as to be of any service for clinical use. At times, temporary benefit results. He has had no experience with ill-effects after its use. The results obtained would not induce him to make further use of it in the treatment of tuberculosis.

DR. WILLIAM OSLER, of Baltimore, reported the result of the use of the remedy at the Johns Hopkins Hospital. Twenty-two cases of pulmonary tuberculosis and three cases of pleurisy were inoculated. None were cured; five were decidedly benefited in their general condition, gaining in weight from nine to fourteen pounds. The bacilli did not disappear from the sputum, but the cough decreased. Nine cases seemed worse for the treatment; in four the condition remained unchanged, and in four slight improvement resulted. No deaths occurred in patients under treatment. The three cases of pleurisy improved in general condition and in weight.

DR. J. P. C. GRIFFITH, of Philadelphia, who had charge of the ward for tuberculosis at the Hospital of the University of Pennsylvania, reported the results of the use of tuberculin in nineteen cases that he had carefully studied. In only one case did decided improvement follow; in this, the general condition became much better, but the consolidation at the apex gradually extended. A number of others improved in general health, but not more, perhaps, than could be accounted for by the favorable conditions incident to a well-regulated hygienic regime. In many cases the sputum and number of bacilli diminished. Albuminuria frequently followed the injections, and at times blood-corpuscles appeared in the urine. It was not possible to decide that the remedy caused the improvement in any case. One case was apparently made worse.

DR. J. W. ROOSEVELT, of New York City, followed with a paper entitled "Experimental Studies on the Causes of the Localization of Pulmonary Phthisis and Certain Other Infectious Diseases of the Lungs." Tuberculosis of the lungs usually begins in the upper lobes. The speaker objected to the generally accepted explanation of infection by inspiration of bacilli with the

dust of the atmosphere. In many experiments that he has made, he has been unable to force dust beyond the larger bronchial tubes in the lungs. He disagrees with those who believe the upper lobes of the lungs expand less than other portions. The bacilli seem first to lodge at the ultimate bronchioles. Dr. Roosevelt thinks that the bacilli gain entrance into the blood through the blood-channels and lymph-channels, by absorption through the mucous membranes of the nose, pharynx, and stomach, and, reaching the blood-stream, are arrested at the pulmonary capillaries. He also thinks that his experiments have demonstrated that foreign bodies in the blood-stream adhere to the upper wall of the vessels, hence the final lodgment in the upper lobes.

In the discussion, Dr. Welch disagreed with the view last mentioned, and called attention to the fact that embolic processes do not by preferment select the upper lobes. Miliary tuberculosis is less marked at the apices than at other portions, and hemorrhagic infarcts are rare at the apices. He queries whether the bacilli may not go to all parts of the lung, but find conditions at the apex of the lung more favorable for growth.

Dr. Ord, of London, also expressed his belief in the selective influence as the cause of the location of the initial lesion. Microscopical examination of apices of lungs in animals shows a less perfect structure than in the other portions, and he thinks that as a result there may here be a lowered resistance.

Dr. Jacobi, of New York, stated that he does not believe that a healthy lung is subject to tuberculosis, and that he considers tuberculosis by embolism rare. He believes infection generally occurs through a diseased mucous membrane, in the course of conditions like catarrh.

Dr. Vaughan, of Ann Arbor, called attention to the fact that the embolic cases of tuberculosis rarely affected the apices, and that therefore the theory advanced by Dr. Roosevelt could not stand.

W. T. Gairdner, M.D., LL.D., Professor of Medicine in the University of Glasgow, made some highly interesting extemporaneous remarks on "An Experience in Sanitary Administration in Connection with Cholera in Glasgow in 1866." In 1865 culminated a most severe epidemic of typhus fever, numbering its victims by thousands. The sanitary conditions of the city were exceedingly bad. An epidemic of cholera was anticipated, and the Privy Council communicated with Dr. Gairdner in reference to measures to combat the epidemic should it appear. Five small hospitals were built, and handed over to the parochial boards to take charge of all diseases except cholera, Dr. Gairdner and eighty assistants to assume entire charge of all cases of cholera, should they appear. Other measures were set on foot to inspire the people with confidence and teach them prophylaxis.

In September, 1866, the first case of cholera was reported; by December the epidemic had disappeared.

The highly satisfactory result of the organization described, led Dr. Gairdner to consider a plan for permanent operation, and to be followed in similar epidemics.

Second Day—September 23d.

The discussion on the "Remote Results of the Removal of the Ovaries and Tubes" was opened by Dr. William T. Lusk, of New York, Referee, who made a strong appeal for greater conservatism in pelvic surgery. During the preceding five years he has removed the ovaries and tubes in sixty-five cases for degenerative changes or myomatous growths.

Dr. Lusk objects to the removal of healthy ovaries and tubes for the various reflex disturbances and nervous symptoms commonly supposed to depend upon these organs. He considers normal ovariotomy little short of malpractice. He believes, however, that Tait's operation has a useful field. Recovery may be expected in hydrosalpinx, and should the diagnosis be uncertain, he does not hesitate to use the exploring needle. In cases of pyosalpinx he considers draining from below good practice. More patience and persistence in therapeutic measures were urged before final resort to operation.

Dr. Wharton Sinkler, of Philadelphia, Co-referee, expressed the view that pyosalpinx and other inflammations constituted the typical indication for the removal of the tubes and ovaries.

Nervous symptoms, like those constantly observed at the menopause, are not infrequent after oöphorectomy. Insanity in some form occasionally seems to depend upon this operation. The immediate result of the operation is satisfactory; but in the cases of operation for nervous symptoms relapse is common. In the cases in which insanity occurs only at the menstrual period operation may be expected to do much good. Following operation for diseased appendages, improvement in the general health and in flesh usually occurs.

Dr. J. J. Putnam, of Boston, presented the views of Boston surgeons concerning removal of the ovaries and tubes. Of 24 cases referred to, in which the organs were but little diseased, the operation being performed largely for nervous symptoms, 8 were reported as benefited, 11 not benefited, and 2 others died of other causes. In some cases favorable results followed operation; in one instance, a woman addicted to the morphine habit, acquired by taking the drug for pain, was entirely cured after operation.

Dr. S. Weir Mitchell, of Philadelphia, expressed the need for more complete statistics. The careful operators, whose work had been referred to in the papers, did not perform all of the operations. It was from the cases treated by the young and inexperienced that he thought impressive lessons might be learned. Dr. Mitchell thinks that ten, fifteen, or twenty years should elapse before finally deciding the remote effects of the operation. He strongly urges observation for some time before operation, and even consultation before recourse is had to surgical measures. The practical abolition of the death-penalty in surgery, he feared, led to operations without proper consideration.

Dr. Gairdner, of Glasgow, related an interesting case in a young single woman, who for a long time suffered the most excruciating pelvic pains, for which she sought medical advice. As this was before the day of pelvic surgery, other measures were employed. It was symptomatically, however, just such a case as oöphorectomy is now done for. The patient married when twenty-five years old, and in a few months became pregnant, when all pain disappeared and never returned.

Dr. Lee, of New York, does not counsel operation

for nervous symptoms; but permanent structural disease of the appendages, when once diagnosticated, is, to his mind, a positive indication for surgical interference.

DR. GAIRDNER keeps up correspondence with his cases for from five to eight years, and in no case has he had cause to regret having operated.

DR. WALTHAM, of Louisville, could not conceive of any condition justifying normal ovariotomy. He considered laparotomy at times a conservative operation.

DR. JAMES STEWART, of Montreal, followed with a paper on "Nerve-stretching in Inveterate Cases of Trigeminal Neuralgia." He confined his observations to those inveterate cases commonly called epileptiform.

Three cases were reported from his own observation free from pain for thirteen, twelve, and four months respectively after operation. He was able to collect from the literature only eleven other cases that had been reported nine months or later after operation.

The results of neurectomy are more permanent than those of stretching. Stretching is a mild operation, and may be repeated several times before resorting to neurectomy or ligation of the common carotid. If the neuralgia is general, several branches of the nerve should be stretched.

DR. FRANCIS DELAFIELD, of New York, read a paper on "The Diseases of the Kidneys Popularly Called 'Bright's Disease,'" which will be published in the October number of *The American Journal of the Medical Sciences*. The following is a brief *résumé*.

The time has fully come to abandon the idea that there is such a disease as Bright's disease, and to cease in the attempt to describe varieties of a disease that does not exist.

The different forms of kidney disease that are commonly included under the name of Bright's disease can all be conveniently classified under the heads of: Congestion of the kidney; degeneration of the kidney; inflammation of the kidney.

Acute congestion of the kidneys is produced by the ingestion of poisons, by extirpation of one kidney, by injuries, by surgical operations, and by unknown causes.

Chronic congestion of the kidneys is produced by some long-continued mechanical interference with the circulation of the blood, an interference that necessarily causes congestion of other parts of the body as well as of the kidneys. The characteristic changes in the kidneys are: Swelling or flattening of the epithelium of the cortical tubes, dilatation and thickening of the capillaries of the glomeruli, congestion and dilation of the pyramidal veins.

Degeneration of the kidneys is always a secondary process induced by the introduction into the body of inorganic poisons or of the poisons of the infectious diseases, or by the effect produced on the body by chronic diseases or vicious modes of life, or by disturbances of the circulation. *Acute degeneration of the kidneys* is almost constantly found with the infectious diseases and with poisoning by arsenic, phosphorus and mercury. Acute degeneration, therefore, includes a well-defined set of cases, definite in their lesions, their causes, their symptoms, and evidently not likely to be influenced by any treatment. *Chronic degeneration of the kidneys* is produced by the same mechanical causes as those that produce chronic congestion, by chronic alcoholism and by vicious modes of life. It is, therefore, always a secondary lesion.

The inflammations of the kidneys are naturally subdivided into: Acute exudative nephritis; acute productive or diffuse nephritis; chronic productive or diffuse nephritis with exudation; chronic productive or diffuse nephritis without exudation; suppurative nephritis; tuberculous nephritis.

Acute exudative nephritis is an acute inflammation of the kidneys, characterized by congestion, an exudation of plasma, an emigration of white blood-cells, and a diapedesis of red blood-cells from the vessels; to which may be added swelling or necrosis of the renal epithelium and changes in the glomeruli. Of such a nephritis we may distinguish three varieties:

1. A mild form, which occasions symptoms during life, but leaves no lesions in the kidneys after death.

2. A more severe form, in which we find inflammatory changes in the kidneys after death.

3. A form characterized by the excessive production of pus-cells.

In the mild cases we find no decided lesions in the kidneys after death. In the more severe cases the kidneys are increased in size, their surfaces are smooth, the cortical portion is thick and white, or white mottled with red, or the entire kidney is intensely congested. Such conditions are characterized by the evidences of exudative inflammation in the tubes, stroma, and glomeruli.

As to *etiology*, acute exudative nephritis is frequently a primary disease, occurring either after exposure to cold, or without discoverable cause. It complicates infectious diseases and severe inflammations. The urine is diminished in quantity; its specific gravity is apt to be high; it contains albumin in considerable quantity, hyaline and granular tube-casts, blood-cells and epithelial cells.

Acute productive or acute diffuse nephritis is one of the forms of scarlatinal nephritis; it occurs early and late in the course of diphtheria; it is the most important variety of the nephritis of pregnancy, and it is especially frequent as a primary nephritis with or without a history of exposure to cold. During the acute periods of the nephritis the urine is scanty, colored by blood, of high specific gravity. It contains much albumin, numerous casts of all kinds, and red and white blood-cells.

Chronic productive or diffuse nephritis with exudation frequently occurs as a primary disease, especially in young adults. It follows acute diffuse nephritis, chronic congestion and chronic degeneration of the kidney. It may complicate syphilis, chronic phthisis, chronic endocarditis, prolonged suppuration, and chronic inflammation of the bones and joints. The urine varies in quantity at different times. The specific gravity and the proportion of urea to the ounce of urine slowly diminishes. In the cases of shorter duration the specific gravity is apt to run between 1.012 and 1.020. In the very chronic cases it will be between 1.001 and 1.005. The urine contains albumin and casts.

In *chronic diffuse nephritis without exudation* the urine is increased in quantity, of a specific gravity of about 1.010, containing a diminished quantity of urea, without albumin or casts, or with a trace of albumin and few casts, except during exacerbations of the nephritis, when the quantity of albumin and the number of casts may be considerable.

Acute congestion of the kidneys can be relieved by the application of heat to the surface of the body. Chronic congestion is best managed by the drugs that stimulate the heart and dilate the arteries. We evidently have no means at our command by which we can influence acute degeneration of the renal epithelium. Chronic degeneration also seems to be a condition that we are unable to treat.

In acute exudative and in acute diffuse nephritis the main indications for treatment are to diminish the severity of the nephritis and to regulate the circulation. To diminish the severity of the nephritis we employ cups over the lumbar region, heat over the lumbar region or over the entire body, and the internal use of calomel, sulphate of magnesia, opium, aconite, or digitalis.

The disturbances of the circulation are largely the causes of the cerebral symptoms and of the dropsy. With a laboring heart and contracted arteries we employ the drugs that dilate the arteries—chloral hydrate, opium, nitrite of amyl, and nitroglycerin—or we diminish the quantity of the blood by venesection, sweating or purging. With a feeble heart and relaxed arteries we use the cardiac stimulants.

In chronic nephritis climate and mode of life constitute the important parts of the treatment; it is doubtful if drugs exert any effect on the nephritis. A warm, dry climate and an out-of-door life are of the greatest importance. Medical treatment can, however, be employed with advantage for the anemia, the dropsy, and the disturbance of circulation.

DR. ANDREW H. SMITH, of New York, read a short paper, expressing belief that albumin is a transition-substance, capable of existing in several different forms. In a series of experiments he boiled a solution of serum-albumin, and removed the precipitate by filtration. Nitric acid was added to the filtrate and again the mixture was filtered. Precipitates were further produced by the addition of bichloride of mercury, ether and chloroform, thus showing that no one reagent removed all of the albumin.

DR. VAUGHAN, of Ann Arbor, in testing urine for albumin, depends solely upon heat and nitric acid, separately and combined, and acetic acid, with ferrocyanide of potassium, and does not consider the other reagents reliable.

THIRD DAY—SEPTEMBER 24TH.

A Discussion upon the Relations between Arterial Disease and Visceral Changes was opened by DR. GEORGE L. PEABODY, of New York, Referee. He confined himself to the consideration of arterio-sclerosis. The cause of the disease is a general defect of nutrition, with such special etiological factors as heredity, syphilis, alcoholism, old age, etc.

According to the view of Thoma as to the cause of arterio-sclerosis, the muscular coat of the artery loses tone, as a result of which the vessel dilates. The blood-current then becomes slower. To compensate for the dilatation of the vessel, a new growth occurs in the intima, which may almost occlude the artery. This is the only lesion that Dr. Peabody has succeeded in finding in a number of cases of angina pectoris examined. One of the first evidences of the disease is seen in the eye-ground. The vessels elongate, as shown by their greater tortuosity. The carotids and their branches at times seem to be the first to be affected.

DR. W. T. COUNCILMAN, of Baltimore, Co-referee, reported the result of a study of some forty cases of arterial and visceral disease at the Johns Hopkins Hospital. He believed, with Dr. Peabody, that the disease originates in the muscular coat of the arteries.

In the discussion, DR. ORD, of London, expressed the belief that the disease was a general one, affecting the whole system, and possibly in some way connected with gout. Gout being such a common affection in London, he had had opportunity to see many cases of the disease under discussion.

DR. GAIRDNER, of London, discussed the relation of the disease to aneurism.

DR. R. H. FITZ, of Boston, read a paper on "Intestinal Perforation in Typhoid Fever: its Prognosis and Treatment." The writer said that this complication is found in about 1 per cent. of all cases of typhoid fever, and is the cause of death in somewhat more than 6 per cent. of the fatal cases. It rarely occurs in children, and is twice as frequent in man as in woman. It is present in the small intestine in more than four-fifths of the cases, and usually proves fatal during the first week after its occurrence. It takes place in mild or in severe cases, and its symptoms may be absent or latent, gradual or severe.

Differences of opinion concerning its prognosis have existed for many years, and are based upon a lack of agreement as to the significance of the symptoms. Though these are often called characteristic, they give evidence only of a peritonitis, general or circumscribed. This may, in typhoid fever, result from a variety of causes, and fatal perforation may occur without any symptoms suggesting its presence.

In most cases of recovery from symptoms of perforation of the bowel in typhoid fever an attack of appendicitis is closest simulated, while in the great majority of the fatal cases other parts of the bowel than the appendix are perforated. It is probable that the appendix is more often inflamed and perforated in typhoid fever than has hitherto been suspected.

In typhoid fever the prognosis of apparent perforation of the bowel is to be regarded as the more favorable the more closely the symptoms and their course resemble those of appendicitis.

In the treatment of this complication early laparotomy is reported to have been tried in ten cases, with but one successful result; while of twenty-seven cases of circumscribed peritonitis in typhoid fever, largely attributed to intestinal perforation, three recovered after incision, seventeen after resolution, and nine after the spontaneous discharge of pus.

It is recommended that immediate laparotomy be employed for the relief of suspected intestinal perforations in typhoid fever only in the milder cases of this disease. In all others evidence of a circumscribed peritonitis should be awaited, and may be expected in the course of a few days. Surgical relief of this condition should then be urged as soon as the patient's strength will warrant.

In the discussion, DR. J. M. DA COSTA, of Philadelphia, stated that he had recently met with two cases of intestinal perforation in typhoid fever, in which opera-

tion was performed in one within six hours after the first symptom. The patient seemed to do well at first, but died some twenty-six hours later.

In the second case an operation was not performed until thirty-six hours after the perforation. This patient also perished.

Dr. Da Costa would not advise operation for perforation. In cases, however, in which perforation has occurred and the peritonitis has been localized by adhesive inflammation, and the patient should live, an operation could be performed later for the peritonitis. Should general peritonitis follow perforation, any means of treatment must prove futile.

DR. WILLIAM PEPPER, of Philadelphia, was particularly struck by the number of cases of recovery after perforation reported in medical literature. He feared that in some of these cases a mistake in the diagnosis had been made. He was reminded of three cases in which he had recently been asked to see patients in the third week of typhoid fever, all of whom proved to be suffering from appendicitis.

DR. HENRY P. WALCOTT, of Cambridge, read an interesting paper on "The Relation of Drinking-water to Disease," in which he pointed out that neither the appearance nor the taste of water is to be relied upon as indicative of purity or impurity. Even chemical analysis may often fail to detect serious objections in water. Dr. Walcott believes that it is either living organisms or their products that are most harmful.

The last paper of the day was "A Contribution to the Pathology of Pernicious Anemia," by DR. J. P. CROZIER GRIFFITH and DR. CHARLES W. BURR, of Philadelphia.

A new classification of the anemias, upon a more scientific basis, was proposed.

DRS. GRIFFITH and BURR have found that by treating with ferrocyanide of potassium sections of the liver from cases of pernicious anemia the blue reaction characteristic of iron is produced. This reaction was wanting in all other cases.

For purposes of comparison the organs of patients dead of other forms of anemia were examined, and in each case the distinct difference from pernicious anemia was demonstrated.

For this reason, as well as on account of the other characteristics of the affection, they classify pernicious anemia as a distinct anemia.

Experiments upon animals are still being made, which being incomplete, were not reported at this time.

(To be continued.)

AMERICAN ASSOCIATION OF ANDROLOGY AND SYPHILOLOGY.

First Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

The proceedings were opened by a paper on "Reflex Irritations and Neuroses Caused by Stricture of the Urethra in the Female," by DR. FESSENDEN N. OTIS, of New York, in the absence of whom the paper was read by his son, DR. W. K. OTIS. Stricture of the urethra in the female is rarely considered or even referred to in works on the general diseases of females, or on the special diseases of the genito-urinary organs of the female. From this it might be inferred that the difficulty is so rare or unimportant as to be of little consequence. Symptoms in the female that in the male would at once be accepted as indicating the probable presence of urethral stricture are often referred to under the title of "irritable bladder," and attributed to causes quite independent of their possible relations to the urethra. The fact that stricture of the male urethra is accepted as usually due to either gonorrheal inflammation or to some traumatic cause, while the "irritable bladder" in the female occurs quite independently of any previously recognized inflammation or injury, tends doubtless to prevent the consideration of stricture as a possible cause of the trouble. In regard to the origin of organic urethral strictures, in either male or female, Dr. Otis is thoroughly convinced that the largest proportion depended upon cicatricial deposits due to lithiasis, at periods often long antecedent to the gonorrhea to which they are attributed. The histories were given of four cases of stricture of the urethra in the female, causing reflex troubles as varied and severe as those occasionally caused by stricture of the urethra in man. Relief was afforded by removal of the strictures. The desirability of early exploration of the urethra by means of the urethrometer or the bulbous sound was suggested, in order to promptly eliminate at least one important element of failure in the diagnosis and treatment of such cases.

DR. ROBERT W. TAYLOR, of New York, read a paper on "Genital Chancres in Women." He stated that while chancres of the genital organs were common in both sexes, extra-genital chancres were more common in women than in men. In women they are more irregular in their course and are often small and ephemeral, so that their nature is not suspected. For clinical purposes, Dr. Taylor classed genital chancres in women as follows:

First. The superficial or chancrous erosion, which appears first on the mucous membrane, and is liable to be mistaken for a ruptured herpetic vesicle or an abrasion. It is benign in appearance, and begins as a red spot somewhat deeper in color than the mucous surface on which it is seated. It has but a short period of existence and frequently comes and goes without the knowledge of its bearer. Second. The scaling papule or tubercle, which is found upon the outer surface of the labia majora, upon the labia minora, upon the prepuce of the clitoris, upon the internal surface of the thighs, the inguinal folds and the hypogastrium. It begins as a small, dull-red papule, and when irritated it loses its epidermal covering and becomes raw and exuding. All chancres of this variety are slow in disappearing. Third. The elevated papule, which presents the appearance of a small, well-circumscribed, flat or elevated lesion, the surface of which is similar to that of the chancrous erosion. It is seen in its most typical form upon the mucous membrane of the labia majora and minora. It may become much hypertrophied and around it may develop a greater or less degree of indurating edema. It rarely shows marked induration. Fourth. The encrusted chancre, which is not uncommonly found upon the pudendal cutaneous surfaces, and indeed upon

any portion of the integument. Encrusted chancres are said not to be found within the area of the mucous membrane of the vulva, but it is not uncommon to find chancres in an encrusted state at the fourchette, and they are rarely found upon the clitoris and the labia minora. Rarely the chancre called by Fournier *chancre multicolore*, or the *chancre en cocarde* is found, in which the surface of the chancre presents a series of concentric zones of different colors. Fifth. The indurated nodule, which is rare in women, although common in men. In men the syphilitic neoplasm is, as a rule, circumscribed and compact; in women it tends to diffuse itself more loosely into the soft mucous tissues. Sixth. The diffuse exulcerated chancre, which is not infrequently observed in women of the lower order, who are uncleanly in their habits and intemperate. It presumably begins as a chancrous erosion. This form of chancre sometimes looks like raw beef, and at other times like an elephantine encrusted chancre.

As a rule, chancres in the female are unaccompanied with pain. Chancres of the vagina are rare.

In reply to an inquiry by Dr. Edward R. Palmer, of Louisville, Ky., as to whether chancres were more common on the upper or the lower lip, Dr. Taylor stated that it was a matter of chance. Of the labial chancres that had come under his observation, probably 60 per cent. had been of the lower lip.

Dr. J. Blake White, of New York, presented some "Observations upon the Syphilitic Cachexia." He stated that although syphilis has for centuries been a familiar disease, the essential nature of the poison still remains undiscovered. Specific diseases ordinarily exhibit a peculiar affinity for certain tissues and organs of the body, but after the initial manifestation of syphilis and its accompanying adenopathy, every structure of the body may become attacked, and if it is not checked in its inception a host of consecutive ills may ensue; the unfortunate sufferer cannot hope for spontaneons resolution, as occurs in many other maladies. Certain temperaments are less prone than others to put on the cachectic livery of the disease, but experience tends rather to prove that no particular temperament enjoys an absolute immunity from it. Patients suffering from any form of scrofula or tuberculosis, or whose kidneys are diseased at the time of infection, suffer most severely from the consecutive accidents of syphilis. In such cases it becomes necessary to use tonics and to have recourse to remedies that also act through the glandular system. The therapeutic value of the salts of gold in the cachexia of syphilis has been strongly advanced. A combination of the salts of gold with those of manganese in tuberculous and syphilitic affections has proved an especially advantageous remedy. The salts of platinum may be substituted for those of gold. The salts can be combined in fluid form and administered hypodermatically, glycerin being used as a solvent.

Dr. John A. Fordyce, of New York, read a paper on "The Occurrence of Nephritis in Syphilis." He said that the occurrence of albuminuria, with or without edema, has not infrequently been observed early in the course of syphilitic manifestations. Cases had come under his observation in which the albuminuria had disappeared under the influence of mercury. This transient albuminuria is comparable with other congestive phenomena that take place in internal organs during the early period of this disease, or with the albuminuria that so frequently complicates acute infectious diseases. In addition to this transient albuminuria in early syphilis, and the more serious amyloid, gummatous, and interstitial nephritides, a number of observers have noted the occurrence of an acute parenchymatous nephritis, pursuing a course not unlike the nephritis of scarlatina, at times terminating in recovery and again passing into a chronic form.

Dr. Taylor took exception to the statement that Nature does not eliminate the poison of syphilis. Syphilis is often aborted during the first or second stage. Animals are immune to syphilis, and some persons seem to possess the same immunity. Clinical evidence goes to show that syphilis sometimes does abort spontaneously. To those who suffer decidedly from the syphilitic cachexia should be added tall, thin persons, flabby individuals, and persons with light-red complexions.

Dr. Taylor stated that transient albuminuria was common during the earlier stages of syphilis. Casts are rare, but when found they are usually of the hyaline character.

Dr. J. Nevins Hyde, of Chicago, indorsed what Dr. Taylor said about the immunity of certain persons against syphilitic infection. A number of such cases had come under his personal observation in which no symptoms had appeared after a lapse of many years.

Dr. James P. Tuttle, of New York, stated that eighteen months ago a man came under his observation with a typical papular indurated chancre. Two weeks afterward he brought his wife, who had become infected, and about six or seven weeks later his mistress, who at that time had an erosive chancre. All received no treatment until the secondary symptoms appeared. The man suffered from these symptoms in their most virulent form; the wife developed them in a milder degree, while the mistress has yet never had a single symptom.

Second Day—September 23d.

Dr. Edward L. Keyes, of New York, opened the session by reading a report of "A Case of Excision of Stricture and Urethroplasty for Radical Cure." He stated that the radical cure of stricture of the deep urethra is still an unsettled question. For the anterior urethra the question has been measurably solved through the zeal and energy of Dr. Otis, of New York, by his persistent advocacy of extensive dilating urethrotomy. The same solution has not yet been made applicable in the case of organic strictures of the deep urethra, nor has any other single rule been advanced to cover all cases. Dr. Keyes classified deep organic strictures into three groups, namely: the soft, the cicatricial, and the nodular. The soft stricture is not uncommon; it can be recognized by a peculiar sensation in the passage of the instrument, and can be permanently cured by continued dilatation. The history of a case of radical cure of a deep urethral stricture, complicated by perineal fistulæ, and by considerable nodular tissue, was detailed. The stricture was first laid open upon a filiform guide, and the dense fibrous tissue composing it cut out; the fistulous tracts were also dissected out and a plastic operation was performed, a large flap being taken from the inner

layer of the prepuce for that purpose. This piece of tissue was first thoroughly disinfected and then sutured into place in the gap left by the excised stricture. The perineal wound healed rapidly and recovery was uninterrupted.

MR. REGINALD HARRISON, of London, stated that while his experience with this class of cases was limited, he thought that the method of treatment was valuable in deep urethral strictures. While in Paris during the past summer he had seen M. Guion treat a number of cases of traumatic stricture by excision. Instead of doing a plastic operation, however, M. Guion had closed the perineal wound by three layers of sutures.

DR. ARTHUR T. CABOT, of Boston, read a paper entitled "A Contribution to the Surgical Treatment of Ruptures of the Bladder," in which he considered the conditions of extra-peritoneal rupture of the bladder. The usual symptoms of rupture of the bladder were tolerably distinct, and in most cases the lesion can be demonstrated beyond doubt by the injection of air or fluid. This test sometimes fails when the rent is small, or when there is a valvular closure of the bladder-wound. Some authorities advise that cases of extra-peritoneal rupture should be treated by simple drainage of the bladder, either through a perineal wound or by a retained catheter. Dr. Cabot considers that this plan affords insufficient drainage for the urine that has already escaped into the tissues, or for the pus and masses of sloughing tissue following contact with the urine.

It is important for the operator to know where the rent in the bladder-wall is situated, and in what direction the urine is forcing its way into the loose perivesical connective tissue. When this knowledge is obtained, he can make an opening into the extravasation from the nearest available point on the surface, and establish the most direct drainage possible. An incision into the prevesical space, as suggested by Mr. Rivington, is only applicable in cases in which the rupture is in the front wall of the bladder and in which the effusion is slight. Another plan proposed in doubtful cases is to perform median cystotomy, and with the finger in the bladder to search for the rents, but this method has in some instances proved unsuccessful. In uncertain cases of extra-peritoneal rupture the best method of obtaining a knowledge of the condition of things is to open the abdominal cavity, thus getting an opportunity to thoroughly inspect and palpate the parts about the bladder. Dr. Cabot then related the history of a case in which an extra-peritoneal rupture of the bladder occurred during the operation of litholapaxy, which was at once discovered and treated by opening the abdomen. He suggested that in all cases in which a rupture is made out, immediate action should be taken, and laparotomy performed, excepting when it is evident that the urine is extravasated into the prevesical space—when a supra-pubic incision is sufficient—or in cases in which the patient's condition is such that he cannot bear more than the median operation.

SIR WILLIAM MACCORMAC, of London, stated that in many cases the diagnosis of intra-peritoneal ruptures of the bladder was easier than that of extra-peritoneal ruptures. A point of diagnosis mentioned in the text-books on the subject, namely, extreme shock, he failed to find in two cases under his observation.

DR. L. BOLTON BANGS, of New York, stated that the cystoscope might be employed in locating rents in the bladder.

DR. KEYES stated that it was impracticable to employ the cystoscope in these cases, on account of the bleeding.

DR. CABOT called attention to the fact that the ruptured bladder would be collapsed, and so not be suitable for the employment of the cytoscope.

DR. JOHN P. BRYSON, of St. Louis, read a paper on "The Use of Salicylic Acid in the Treatment of Certain Forms of Cystitis," in which he related that about three years ago a student by mistake mixed an ounce of a 2 per cent. solution of salicylic acid in glycerin with five ounces of water for the purpose of washing out the bladder of a patient with chronic exudative cystitis, who had previously had his bladder irrigated with the standard borax solution without material benefit. The returning fluid was milky in appearance, and a second injection was made before the mistake was discovered. The patient returned the next day, and reported that he was much better, and requested that a similar injection be again given, which was done. Since then, in similar cases, a salicylic acid solution has been in common use at the genito-urinary clinic of the St. Louis College, and marked benefit has been obtained from it. It is especially useful in the more chronic cases, in which the surface of the bladder is covered with a thick or a tenacious protection, made up of mucus and necrotic epithelium. Salicylic acid has the power of dissolving or loosening the epithelial cells, and the bladder is then in a proper condition for the use of other remedies. The use of the salicylic acid solution is not of equal service in all cases of cystitis, and is distinctly contra-indicated in some. In acute cystitis, with thin exudation, it is not called for. Where there is ulceration, with a disposition to bleed, it is harmful. It is also harmful in tuberculous disease, and in old cases of prostatic disease, with sacculated bladders.

DR. EDWARD R. PALMER, of Louisville, stated that Dr. Bryson had mentioned this incident to him a year ago in Altoona, and that since then he has had considerable favorable experience with the use of salicylic acid as an injection in cystitis. He wished to state, however, that in using Thiersch's solution, which is a combination of salicylic and boric acids, his patients often complained of severe pain.

DR. L. BOLTON BANGS, of New York, stated that he was grateful to Dr. Bryson for reporting this method of cleaning out the bladder. His experience with the use of Thiersch's solution was similar to that of Dr. Palmer. He supposed the strength of the solution is somewhat a matter of judgment.

DR. JAMES P. TUTTLE, of New York, said that he had used Thiersch's solution for the past three or four years for irrigating the bladder, and he desired to thank Dr. Bryson for telling him why he had such good results in those cases.

DR. WILLIAM H. HINGSTON, of Montreal, read a paper on "Undetected Stone," in which he dwelt upon the difficulty sometimes experienced in locating a stone in the bladder. The most careful exploration may fail to reveal its presence. In examination for stone the bladder should be partially filled, and the patient can be

made to empty it during the exploration, with the hope that the calculus (if there be any) will strike against the instrument. The slight difference in specific gravity between the calculus and the turbid fluid contents of the bladder allows the stone to float about, and in that condition the sound or searcher does not elicit the characteristic "click" sought for.

DR. EDWARD L. KEYES, of New York, noted that Dr. Hingston had not alluded to the washing-bottle and the small tube for the purpose of detecting stone. Another method is educating the finger to appreciate the gritty feeling—even more important than the "click."

DR. L. BOLTON BANGS, of New York, said that he was in some cases enabled to detect stone in the bladder by means of the cystoscope.

DR. EDWARD L. KEYES, of New York, read "A Note Upon a Possible Service to be Expected from Diuretin in Genito-urinary Surgery," which will be published in full in a subsequent number of THE MEDICAL NEWS.

A paper on "Encysted Stone, Complicated with Growths of the Bladder," by DR. C. H. MASTIN, of Mobile, was read by the Secretary. The history of a case in which a growth was spontaneously expelled from the bladder eleven days after operation was detailed, and the specimens were exhibited.

(To be continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Fifth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

THE session was opened by DR. A. B. JUDSON, of New York, who delivered the President's Address, choosing as his subject, "Orthopedic Surgery as a Specialty." He said that in a Congress chiefly composed of special societies, it was proper to ask why orthopedic surgery exists and thrives as a specialty. He believed it was because orthopedic patients do not, as a rule, make absolute recoveries. There is commonly a residuum of disability and deformity, and general practitioners concur with the public in referring such cases to experts. Orthopedic patients are generally children, and in the slow methods of this specialty great disability and deformity may be avoided by continuous treatment, during which the affected part increases in ability and symmetry with the growth of the child. This is especially the domain of physical demonstration, where subjective symptoms are forgotten in view of objective signs, where diagnosis depends on what can be seen, touched, and measured, where treatment is by physical forces under direct control, and where results are recorded in degrees of an inch and fractions of an inch. Dealing thus with physical realities let us not overlook the moral verities, remembering that diligence is the price of success, and that the only desirable success is to be reached by rejecting error and cleaving to what is true.

DR. W. R. TOWNSEND, of New York, read a short paper on "Uniform Nomenclature in Orthopedic Surgery." While it was not his wish to establish a new school of pathology or to coin new names for the pathological conditions of orthopedic surgery, he felt that as far as possible it was desirable to prevent the designation of one disease by numerous appellations. Thus, for instance, in the various hospitals of New York, hip-joint disease is known by seven different names. Dr. Townsend believes that if a uniform nomenclature were established, a uniform system of taking measurements and clinical histories will speedily follow.

On motion of DR. VANCE, of Louisville, a committee of three was appointed to consider the means of adopting some system of nomenclature that would tend to produce uniformity in this respect.

DR. HENRY LING TAYLOR, of New York City, read a paper entitled "Two Cases of a Peculiar Type of Primary Crural Asymmetry."

In the first case, that of a lady twenty-three years of age, there was a difference of two inches in favor of the left side, measuring from the anterior superior spine of the ilium to the internal malleolus. Measuring from the head of the tibia to the internal malleolus, the left leg was one and one-eighth inches longer than its mate. In the other case, in a girl of fifteen years, the left leg was one inch shorter than the right. Here, also, rather more than half the shortening was shown to be below the knee.

The peculiarity of these cases consisted in the greater size and strength of the shorter limb, of which one of the patients at least was conscious, and which was plainly demonstrated in both. In neither case was there any lesion or impairment of the nervous, muscular or osseous system beyond the unequal development, and in neither case did true lateral curvature exist.

DR. H. AUGUSTUS WILSON, of Philadelphia, reported a case of "Spina Bifida with Partial Motor and Sensory Paralysis of Both Extremities, Complete Paralysis of the Bladder and Rectum, Double Equino-varus and Purulent Bursitis."

The case was that of a colored girl, four years old, of robust appearance, an only child of healthy parents, born at full term, without a diathetic hereditary history.

The spina bifida was in the lumbo-sacral region and the pedicle measured six and one-half inches in circumference. The tumor was hard and dense except in one spot, about a half-inch in diameter, where the covering was extremely thin and the contents oozed on pressure and when the child cried. There were incontinence of urine and involuntary evacuations from the bowels, due to paralysis of the sphincters.

The flexor and extensor muscles of both legs below the knees were paralyzed and the electro-muscular contractility could scarcely be perceived. There was complete anesthesia of the right foot, ankle, and calf on the right side, also present, although less marked, on the left. There was extreme double equino-varus which firmly resisted manipulative correction. On both feet there were suppurating bursæ under the distal extremities of the malleoli upon which the child stood in her attempts to assume the erect posture. Abscesses developed in the labia majora. Attempts made to arrest the suppurating bursitis by incision and the application of chemical antiseptics were followed by a persistent refusal of the incised parts to cicatrize and with no perceptible cessation of the suppuration. This failure of incised wounds to heal contra-indicated surgical attempts at correction of the equino-varus, and mechanical efforts were followed by tumefaction and threatened suppuration at the points

where pressure was necessary, and these were, therefore, also abandoned.

Preliminary puncture of the spina bifida, as recommended by James Morton, prior to injection, was followed by convulsions. The child is still living in a hopeless condition.

DR. T. M. L. CHRYSTIE, of New York, read a paper on "Congenital Club-foot, with Absence of the Great Toe and Contiguous Bones of the Instep," which will appear in full in a later issue of THE MEDICAL NEWS.

DR. WILLIAM E. WIRT, of Cleveland, Ohio, reported a case of "Double Club-foot, Double Club-hand, and Multiple Deformities," the complete text of which will be published in a subsequent number of THE MEDICAL NEWS.

DR. JOHN C. SCHAPPS, of Brooklyn, read a paper on "Mechanical Treatment after Excision of the Knee." The treatment after knee-joint excision is usually lightly passed over by authorities as simply that of compound fracture. But immobilization for a few weeks frequently fails to secure firm bony support from pelvis to ankle. The two cases reported are typical of a large class. They were in boys, respectively fifteen and seven years of age. Only a thin slice was removed from each epiphysis, and very slight flexion was allowed. Union was immediate, without suppuration. After fixation had been maintained for four months a marked degree of flexion took place. This was without recurrence of the disease. At the end of eighteen and ten months respectively after the excision by means of the osteoclast, the limbs were restored without fracture. One relapsed as late as a year and a half after the excision, but the deformity was again corrected by means of a brace. In both, union ultimately became firm with the limb in a nearly straight position.

In these cases the result of the operation was a mass of soft cancellous tissue in length nearly double that of a single epiphysis. In it were inserted at an obtuse angle two long levers, the action of which served to increase the flexion already existing. As the epiphyseal mass subsequently became firm enough to bear the increased weight still transmitted at a mechanical disadvantage, the soft condition must have been due to the congestion that disappeared after the necrotic focus had been removed. The possibility of subsequent deformity should not be allowed to weigh too heavily against excision. If the limb is put up perfectly straight and support is continued for a sufficiently long time (always less than that required by purely mechanical methods of treatment), the danger of deformity is slight. If it occur, it may be corrected within a liberal margin of time. While the operation is not always the short cut to a cure that it has been claimed to be, it has two important advantages: it abolishes at once the traumatism of motion, and removes the tuberculous focus that is always a menace to the patient's life.

In the discussion, DR. PHELPS expressed the belief that the relapses that are so frequent in these cases are due to operating on growing limbs in children under ten years of age. He claims that the limb should be placed in a straight or over-flexed position. Resection of the hamstring tendons, with the wearing of a proper apparatus, is necessary. He would not perform excision in a child under ten years of age, but in such a case would prefer scraping.

DR. HOFFA did not agree with Dr. Phelps. He believes the relapse to be due to a failure to remove all the diseased tissues. He considers it perfectly proper to perform resection in children. He regards the shortening of the limb as due not to the excision, but to the disease itself, and considers the flexion as the result of an atrophy of the extensor muscles.

DR. GRIFFITHS, of Kansas City, does not cut the hamstring tendons, but carefully removes all of the diseased portions, preserving, if possible, the inelastic patellar ligament and the extensor femoris. He urges the importance of this preservation of the inelastic tissue, and its connection with the quadriceps femoris.

DR. A. J. STEELE, of St. Louis, read a paper on "The Orthopedic Work of the Late Mr. Thomas." Mr. Thomas was a corresponding member of the Association. Dr. Steele eulogized his skill and devotion to work. Founding his belief on the inflammatory nature of joint-disease, Mr. Thomas was an earnest advocate of thorough immobilization of the joint, with the removal of all pressure. He was strongly opposed to traction, claiming that no advantage resulted and much injury was done. Dr. Steele, however, regarded traction as of great service, especially in the earlier stages of the disease.

DR. A. M. PHELPS, of New York City, exhibited "Some Lateral Traction Fixation Hip-splints." He believes that spasm of the muscles is always present in morbus coxarius, and that this results in an aggravation of the diseased condition. Hence the necessity for some method of immobilization of the joint. The joint should be fixed until perfectly cured, whether for a few months only or for a year. Ankylosis does not follow prolonged immobilization, but is due to pathological processes in the joint. Atrophy of the muscles, however, will follow. In the treatment of joint-inflammation rest is the most important law, as it is of all inflamed tissues. Traction should be made not only in the line of the shaft of the bone, but laterally in the line of the axis of the neck.

DR. VANCE believed that the treatment of hip-joint disease depends as much on the constitutional condition and hygienic surroundings of the patient as on the use of splints.

DR. SAYRE stated that only in rare instances does he find it necessary to employ lateral extension. He believes that in cases of fibrous ankylosis much good can be accomplished by judicious passive motion. But if pain and tenderness persist for over twenty-four hours after such motion, harm has been done.

The paper of MR. B. E. BRODHURST, of London, upon "Gonorrheal Rheumatism and Its Treatment, Primary and Secondary," was read by DR. RIDLON. It dealt with the causes, varieties, pathology and treatment of gonorrheal joint-inflammation, more particularly the inflammation occurring in the larger joints resulting in ankylosis. Several interesting cases were reported. Reference was made to the treatment of ankylosis by forcible extension under anesthesia, tenotomy being employed when necessary. In this manner Mr. Brodhurst had operated upon over 1000 cases of fibrous ankylosis, in none of which had an accident of any kind occurred.

DR. E. G. BRACKETT read an interesting and instructive paper upon "Atrophy in Joint-disease." He noted that in all cases of joint-disease, atrophy occurs,

of varying degree, and not directly proportional to the severity or duration of the disease. The leg is nearly uniformly involved throughout. The atrophy is usually ascribed to the direct influence of the diseased joint on the nutrition, through the nerves.

Dr. Brackett maintained that this theory does not explain the condition, because of the variation in its occurrence and the uniform distribution over the whole leg. If due to a reflex influence from the diseased part the degree of atrophy should bear a relation to the character of the disease—which it does not. It should also more particularly affect that portion of the limb diseased; but the whole leg is nearly uniformly involved. An analogous result is seen later in the lack of development, which is proportional to the degree of freedom given the limb, and involves all parts equally, as would be expected from a physiological defect of nutrition.

It must be concluded that the degree of atrophy in joint-disease is chiefly determined by the degree of use. Atrophy occurs in other conditions not arising from disease, but occasioning restriction of function.

This atrophy is uniformly distributed over the entire limb. The lack of development is also uniformly distributed, and is proportionate to the freedom that the limb has been allowed.

In the discussion that followed, the theory of atrophy from disease was opposed by DR. YOUNG, of Philadelphia, who held that in joint-disease the reflex tetanoid spasm that occurs so early and persistently throughout is the real cause of the early and most important atrophy. In reply to a question by DR. COOK, of New Haven, as to why the foot of the diseased limb, for example, should atrophy, Dr. Young said that this was the true atrophy from disease and had not the significance of the early atrophy that results from tetanoid spasm.

"The Diagnostic and Prognostic Value of High Temperatures in Chronic Joint-disease," by DR. ROBERT W. LOVETT, of Boston, was the next paper.

High temperature is a constant accompaniment of acute hip-disease and Pott's disease, the rise occurring independently of the presence of pus. Cases with unopened abscesses, as a rule, do not present higher temperatures than those in which no abscesses are to be detected.

In a series of several hundred observations of afternoon temperature in children with hip-disease and Pott's disease, it was noticed that the rise was from 1 to 4°; that in a general way the rise is greater in the severer cases; and that it may be accorded a certain prognostic significance. Cases in the later stages of the disease and convalescent cases are more likely to present normal temperatures, and any rise is to be looked upon as significant of danger.

As a universal and early symptom—being present in many instances before other physical signs—elevation of temperature is of the greatest significance and importance.

DR. WILLIAM E. WIRT, of Cleveland, presented an "Apparatus for Making Traction," unique in its design and effective in its application. It is of the rachet-and-lever pattern, in principle somewhat similar to the levers of Lagarousse, with the difference that the force of the lever is transformed into rectilinear motion, while in the levers of Lagarousse and in fact in all forms of rachet-and-lever, the force is transformed into circular motion. The advantages of this brace (the design of Dr. Karl H. von Klein, of Cleveland) is that no key, screwdriver, wrench, buckle, or straps are required; it is easy to adjust and to regulate; it is not bulky or bunglesome, and it has a fine grade of adjustment.

SECOND DAY—SEPTEMBER 23D.

DR. AP MORGAN VANCE read an interesting paper, entitled "The Aspirator in Orthopedic Practice," in which he detailed the results of his experience, during the past ten years, with the use of the aspirator in the treatment of abscess from Pott's disease. He employed aspiration in all cases as soon as the diagnosis of abscess was made.

DR. ROSWELL PARK, of Buffalo, presented "A Study of Atrophies." He considered his subject from an historical point of view, alluding to the researches of Bonnet and the discussions and papers of Verneuil. He dwelt at length upon the teachings of Ollier and his pupils. The object of the paper was to popularize teachings on the subject that have been overlooked by the profession.

In a paper on "Diagnosis of Pott's Disease," DR. ROBERT W. LOVETT, of Boston, presented an able *résumé* of the subject, and dwelt particularly upon the importance of physical signs. The diagnosis does not depend upon the history of the case, nor can it be established by the subjective symptoms. The most important physical signs are those caused by muscular spasm and by bone-deformity. The symptoms that are caused by muscular spasm are by far the most important, since they occur before the angular deformity. Lateral deviation of the spine is to be considered a very suggestive symptom, and almost a universal symptom, of Pott's disease. High temperature was considered important as pointing to the probable presence of tuberculous bone-disease.

DR. JOHN RIDLON read a paper upon "Syphilitic Spondylitis in Children," which is to be published in THE MEDICAL NEWS.

DR. T. HALSTED MYERS, of New York, read a paper on "Pott's Disease and Pregnancy."

He considered the subject from two points of view: the effects of Pott's disease on pregnancy, and the effects of pregnancy on Pott's disease. He pointed out that by disease in the lower dorsal, lumbar, or sacral regions, the abdominal cavity is diminished in its vertical diameter, and sometimes also transversely. Abscess usually complicates disease of the lower vertebræ, and may still further diminish the capacity of either the abdominal or the pelvic cavity. In the pelvis the degree of deformity is greater the more the disease has interfered with the normal growth of the parts, and the nearer the pelvis its location. The uterus may be excited to contraction by the most varied peripheral and central influences; destruction of all its motor ganglia is well-nigh impossible, however marked the lesion.

A number of cases reported as occurring in tabetic and paraplegic women prove that the assistance of the abdominal muscles (impaired in these cases by the shape of the abdomen) is not absolutely necessary to the accomplishment of parturition, in the absence of ob-

struction from deformities of the pelvis or from resistant soft parts at the outlet.

The indication *par excellence* in the treatment of Pott's disease is to remove the weight of the trunk from the bodies of the diseased vertebræ. The mechanical effect of a weight placed anteriorly is a most disastrous crushing of the vertebral bodies already softened by disease, and totally unable to sustain even the ordinary weight of the body. The probability of abscess-formation by the weight of the gravid uterus alone is necessarily increased. The danger of rupture of an already existing abscess, or of precipitating pressure-paralysis is aggravated. Aside from this, there is during gestation a hyperemic condition of the cord and its membranes, and of the pelvis generally, and the effect of this on disease of the vertebræ must be pernicious. New centers of ossification appear in the vertebræ at sixteen years, and again at twenty-one years, indicating an unusual activity of the nutritive processes, a condition favorable to the onset of Pott's disease, or for the rekindling of old inflammatory foci. At this age marriage most often occurs. In these cases, however, menstruation is generally delayed a number of years.

Statistics demonstrated that the mortality from Pott's disease and associated conditions is considerably higher in married than in unmarried women.

The chief danger to the mother in cases of cured Pott's disease lies in the malformations of the pelvis and abdominal walls, with the consequent greater strain on a vitality in many cases already enfeebled by the small size of the heart and lungs.

The prognosis is unfavorable in cases that develop during pregnancy. Parturition is occasionally attended with no unpleasant sequelæ.

In deciding upon treatment, four points are to be considered: Is the disease cured, or progressive? Is the pelvis contracted, or practically normal? If on examination the patient is found to be pregnant, and the disease cured, the degree of pelvic deformity will be the guide as to treatment. There can be no fixed rule in these cases; each must be judged by itself. It has been demonstrated that normal birth often follows in cases in which measurements would indicate that it was impossible.

It is important in cases of spinal caries in pregnant women for the orthopedic surgeon to make the diagnosis early, so that they may be put into the hands of the obstetrician at as early a period of gestation as possible, in order that abortion or premature labor may be induced, if necessary.

In cured cases, neither pregnancy nor labor occasions a relighting of the original process. In cases in which pregnancy complicates active disease of the spine, the pregnancy should be terminated at the earliest date possible.

DR. ALBERT HOFFA, of Würzburg, Germany, read one of the most important papers of the session upon "Pressure-myelitis in Pott's Disease," which was illustrated with microscopic slides and diagrams. His investigations showed the most frequent cause of paraplegia in Pott's disease to be a pachymeningitis, the exudate in the sheath acting as a direct poison upon the nerve-centers in addition to the pressure produced by the accumulated fluid.

DR. YOUNG referred to two cases which recovered under his care in which the loss of sensation was present, and insisted upon the distinction between the two varieties of paraplegia that occurs in Pott's disease.

DR. HERBERT L. BURRELL, of Boston, contributed a valuable paper upon "Abscesses in Pott's Disease," in which he described the symptoms, course, pathology, prognosis, and treatment of these serious complications.

His conclusions, from his personal experience, were:

1st. That efficient mechanical support of the spine is the prime factor in the treatment of caries of the spine associated with abscess.

2. That under an expectant plan of treatment abscesses will disappear.

3. That the indication for operative interference is a steady or rapid decline in the patient's general condition.

4. That the operation should consist of thorough evacuation of the abscess, and the establishment of drainage from as near the seat of the disease as practicable.

DR. W. R. TOWNSEND, of New York City, in his paper upon "Abscesses in Pott's Disease," which will appear in a subsequent number of THE MEDICAL NEWS, referred particularly to the increase in our knowledge of tuberculous abscesses that the study of bacteriology has brought about.

DR. JAMES K. YOUNG, of Philadelphia, reported a successful case of bilateral lumbar abscess associated with Pott's disease, in a very young child, and referred to the importance of the fascias in determining the course and exit of abscess in spine disease. The paper will appear in full in a subsequent number of THE MEDICAL NEWS.

The paper by MR. GEORGE A. WRIGHT, of Manchester, England, on "Evacuation of Spinal Abscesses without Drainage," dwelt upon the method of Mr. Mayo Robinson, of aspiration and injection, but more particularly upon that of Mr. Barker, in which a free incision is made, the interior of the abscess scraped with Volkmann's spoon, and then washed out with an antiseptic solution; the excess of fluid is expressed, the wound closed and dressed with firm pressure, to keep the walls in contact and the cavity, as far as possible, obliterated. His conclusions are so excellent that they are given in full. They are:

1. The first essential is *rest*, in its surgical sense, to the spine.

2. When efficient rest has been provided, an abscess should be left to itself for a period of not less than a month, unless it is increasing.

3. If the abscess increases, and is evidently going to open spontaneously, or if there is acute suppuration going on, the abscess should be dealt with by Barker's method, provided thorough asepsis can be practically assured.

4. An abscess that remains stationary for more than two months, or thereabouts, should be dealt with by Barker's method, provided rest has been afforded to the spine throughout the period.

5. Receding abscesses should be left alone.

6. Residual abscesses, if stationary or advancing, should be dealt with by Barker's method, and will certainly be cured.

7. Refilling of an abscess, or persistence of a sinus

after evacuation, should be dealt with by a repetition of the operation as soon as it is evident that repair will not take place; *i. e.*, usually in a month.

8. If there is a doubt about the real maintenance of the asepsis, either from want of training on the part of the surgeon or his assistants, nurses, friends, etc., the abscess should be left alone, or dealt with by aspiration and injection of iodoform.

DR. SHAFFER believed that as long as abscesses were small, they should be allowed to open spontaneously. In large abscesses, when there is a question of life or death, his practice is not to open the abscesses but to depend upon hygiene, mechanical and climatic treatment, under which many of his cases had recovered.

DR H. AUGUSTUS WILSON, of Philadelphia, said that he believed that the good effects obtained by operation were largely due to the immediate closure of the skin-wound. He was not impressed with the advantages of the aspirator, except for diagnosis. He believed that when it was advisable to open Pott's abscess it should be done by free incision, either at the most dependent part or through and through, and closure of skin-wounds by subcutaneous suture and collodion before applying dressings.

DR. WILSON had found decided benefit from hyper-distention with peroxide of hydrogen (to be employed only when free incision had been resorted to), and subsequent douching with hot water.

DR. HOWARD MARSH, of London, said the opinion was growing strongly and constantly in England that these abscesses ought to be opened. In regard to the opening and thorough cleansing of the abscesses there is a difference of opinion. Mr. Barker favors the opening and dressing. Mr. Marsh believes in opening freely, cleansing thoroughly, bringing the edges together, and depending on rest and constitutional treatment.

He was at one time an advocate of aspiration, and later of hyper-distention, but in a large number of cases septic action set in, and he had abandoned the procedure. His method is free incision at once when diagnosis of abscess is established; in not more than 4 or 5 per cent. does asepsis fail, and in the large majority of cases recovery occurs. He believes that one reason for opening these abscesses is to stop the evil result of pressure symptoms.

DR. BRADFORD agreed with Mr. Marsh, and expressed the opinion that the opening of large abscesses and washing with hot water is not attended by any shock, and referred to twenty-five cases of very large abscesses in which opening was not attended by shock.

Large abscesses are sometimes absorbed; but the opening of large abscesses was unattended with shock, and time is saved.

DR. HENRY LING TAYLOR, of New York, read a paper on "The Value of Mechanical Treatment in Old and Neglected Cases of Pott's Disease."

The object of mechanical treatment in Pott's disease is twofold: first, to provide rest and protection for the spinal column and proper hygiene for the patient until the inflammatory process is arrested and repair is complete; secondly, so far as possible, to prevent or mitigate deformity. Fortunately, the same means, antero-posterior leverage support, may be adapted to both ends.

The course of this disease is often tedious, and definitive healing extremely slow. Complete bony ankylosis of the diseased vertebræ is both later and rarer than usually supposed, as indicated by more or less mobility through the kyphosis, often discoverable by careful testing in long-standing and greatly-deformed cases. Owing to imperfect treatment or other causes, rational symptoms and disability often persist for many years, coincidently with a gradual increase of deformity; or after a considerable period of immunity, the original trouble may be lighted up by a strain or fall.

These old and often apparently desperate cases usually respond kindly to efficient mechanical treatment, which should be employed to the same definite end, and with the same painstaking as in more recent ones. Even when deformity is excessive, moderate improvement of the figure may exceptionally be looked for, and increase can usually be prevented; the subsidence of local inflammation is evidenced by improvement in the patient's health, and the disappearance of suffering and general and local symptoms. Abscesses and paralysis do not prevent a favorable prognosis.

The mechanical treatment of Pott's disease in those adults and cases of long standing that will heartily cooperate with the surgeon is not only hopeful, but usually successful, in removing disease and the disability dependent upon it, and no patient should be denied the opportunity for relief on account of age, severity of symptoms, or the long duration of his disease.

(To be continued.)

AMERICAN PEDIATRIC SOCIETY.

Third Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

WHEN the meeting was called to order, the Secretary read a communication from DR. WILLIAM PEPPER, Chairman of the Executive Committee of the Congress, admitting the Pediatric Society to membership.

The President, DR. T. M. ROTCH, of Boston, made an eloquent appeal for more scientific work in pedriatics, and expressed the hope that the work of the members of the Society would compare favorably with that of those in other branches of the profession. He felt that this had not been the case sufficiently in the past.

DR. J. LEWIS SMITH, of New York, read a valuable paper on "How to Prevent Complications and Sequelæ in Scarlet Fever."

He first pointed out that the type of scarlet fever varied in different epidemics, the disease sometimes being mild, with a low mortality; at other times severe, with a high mortality.

No other disease of childhood presents as many complications; and sometimes death occurs from the intensity or malignancy of the disease.

The intense inflammation of the fauces, which is sometimes followed by gangrene, inflammation of the Eustachian tube, otitis media, adenitis and cellulitis, together furnish abundant evidence of serious local trouble, as well as of systemic intoxication.

In scarlatina, various bacteria abound on the faucial surfaces; of these, streptococci have been constantly

found, and seem to predominate. It would appear that these enter the circulation, and may give rise to certain of the complications.

Some authors ascribe the rheumatism that occurs in the course of scarlatina to bacterial agencies; many pathologists are also of the opinion that the glomerulo-nephritis is caused by microörganisms.

In view of these facts, the application of antiseptic solutions to the naso-pharynx would seem to be useful in preventing the entrance of the germs into the body, with the serious results that may follow.

Peroxide of hydrogen in the strength of one part to four of water may be used for the fauces, and one part to eight of water for the nares; or corrosive sublimate may be used in the strength of two grains to a pint of water, but not to be applied oftener than every three hours.

Dr. Smith uses a lotion composed of boric acid, two drams; borate of soda, two drams; chloride of soda, one dram; and water, a pint. One fluidram of this mixture is to be injected into each nostril every hour. In using any one of these lotions, they should first be warmed.

In addition, in the sthenic cases, with high fever, cold applications to the throat may be useful.

Eclampsia is always a serious complication. It occurs early from hyperpyrexia, or if late in the disease, from uremia. Restlessness, jactitation, and delirium should arouse suspicions of possible eclampsia, and indicate measures to prevent this complication. If, in the early stage, cold-water treatment to reduce fever, in addition to the local antiseptic alluded to, with the internal administration of bromides, may forestall this alarming complication.

Aconite and phenacetin may confidently be recommended in the hyperpyrexia of cases not markedly adynamic. In general, the other antipyretics are either not to be relied upon, or are harmful. Sodium salicylate at times causes albuminuria, or may be the starting-point of a nephritis.

Ante-mortem heart-clots would probably be prevented by active stimulation—the administration of musk, ammonia, etc. Scarlatinal rheumatism, in itself not a serious complication, becomes important when it is considered how frequently endocarditis or pericarditis is simultaneously present.

Though it has been suggested that both rheumatism and glomerulo-nephritis occurring in scarlatina are of bacterial origin, either may be caused by cold; it is, therefore, necessary to avoid exposure of the patient, especially during desquamation.

DR. FRUITNIGHT, of New York, expressed the belief that the complications last mentioned result from exposure; he therefore always insists upon (1) warmth, (2) rest, and (3) milk diet.

A paper on "The Most Diagnostic Symptoms of the Early Stage of Lobar Pneumonia, and the Differential Diagnosis from Such Diseases as Meningitis, Malaria, Scarlet Fever, etc.," was read by title, the author, DR. T. S. LATIMER, of Baltimore, being unable to be present.

DR. F. FORCHHEIMER, of Cincinnati, read a paper on "The Diagnosis of Consolidation of the Lung from Effusion (serous or purulent), and the Differential Diagnosis between Lobar Pneumonia and Broncho-pneumonia." He first considered the diagnosis of consolidation from effusion. In classical cases little difficulty should be experienced, but the matter is not so simple in atypical cases. The possibility of encysted effusions must be kept in mind. Dr. Forchheimer does not concur in the view that this is a common condition in children. Most encysted pleurisies in childhood are tuberculous. Inspection may reveal important information. In the case of fluid, there will possibly be bulging. Especial stress was laid upon the increased resistance, the sensation on percussion being characteristic. In consolidation there may be contraction, or at least no bulging, with increased vocal resonance, and fremitus and blowing breathing, perhaps with râles. In children auscultation may be misleading, and is, therefore, not so useful as in the adult. Egophony is rarely heard in children. Dr. Forchheimer cannot admit the existence of idiopathic pleurisies. Empyema was considered a secondary effusion; the use of the terms primary and secondary in this connection he thinks still desirable. The effusion is sometimes gelatinous, so that hypodermatic puncture does not disclose its presence.

In tapping, the puncture should be made as low as possible, in the ninth or tenth interspace—in recumbency, in the posterior axillary line; in the upright posture, in the mid-axillary line; and if the body is inclined forward, in the anterior axillary line.

DR. WILLIAM OSLER, of Baltimore, followed with a paper on "The Diagnosis of Broncho-pneumonia (Acute and Chronic) from Tuberculosis," in which he pointed out that broncho-pneumonia is a lesion, and not a disease. The following suggestive points were considered: 1. The frequency of tuberculosis in infants; tuberculosis is much more frequent than was formerly supposed. 2. The circumstances under which cases of broncho-pneumonia may occur; a child may appear perfectly healthy, with an excellent family history, yet suddenly be attacked; in pulmonary tuberculosis in children, the bronchial glands are involved; convalescence from the acute fevers, measles, scarlet fever, whooping-cough, etc., are fraught with danger. 3. Clinical types; the acute pneumonic form of tuberculosis is not recognized in infants; the condition is usually either lobular or pseudo-lobar. 4. Diagnosis; in acute cases, it is impossible to determine whether the condition is tuberculous or not. Tuberculous and non-tuberculous disease probably affect the upper lobes of the lung with about equal frequency. In the middle portions of the lung, tuberculous disease is apt to predominate in frequency. Bilateral disease is more common after diphtheria and measles.

The physical examination may yield uncertain signs; the family and personal histories are therefore important. If possible, the sputum should be examined.

DR. L. EMMETT HOLT, of New York, followed with a paper on "The Diagnosis of Broncho-pneumonia from Bronchitis, also the Temperature-range in Acute Pneumonia, both Lobular and Lobar." Dr. Holt's experience has been very rich, and being connected, as he is, with the New York Foundling Asylum, opportunity is afforded of watching the cases from their incipiency, as well as before and after the illness. Many temperature-charts were exhibited, showing different types of the disease. Dr. Holt does not believe that the remittent variety has any connection with malaria. In acute bronchitis the temperature is apt to rise abruptly to 104°

or 105°, the fever is continued, and a crisis occurs on about the fifth or seventh day, the temperature frequently falling below the normal. In one-half of the cases a temperature of 105° or more was reached. The highest temperature that he had observed followed by recovery was 106¾°. The mortality increases rapidly as the temperature rises above 104.5°. About one-half of the cases terminated by lysis. The critical day seems to be the seventh. In broncho-pneumonia, the temperature is apt to rise gradually, in a few days to become fluctuating, and finally to fall gradually. The most favorable temperature seems to be from 104° to 104.5°. The mortality increases with much variation either above or below this point.

The differentiation of acute bronchitis from broncho-pneumonia would be made by the temperature-record, the severer symptoms of the latter, and the physical signs. If there is continued high temperature for some days, pneumonia should be suspected, but a low temperature does not exclude pneumonia. Cyanosis and evidences of consolidation point to pneumonia. Again, unilateral bronchitis rarely or never occurs, whereas a localized bronchitis of the finer tubes would indicate pneumonia.

In the discussion that followed, DR. JACOBI, in speaking of the delay in resolution, expressed the belief that the pneumonia was generally a mixed one; that rarely did pure lobar or lobular pneumonia occur in infancy. He thinks that the diagnosis may frequently be made on the second day—difficulty arising in cases in which the pneumonia is central. Some cases are apt to be mistaken for meningitis. The respiration may here be the deciding point. In his experience many cases have occurred in which dulness was detected only in the axillary region, and thus apt to be overlooked. Only the gentlest percussion should be applied in the case of children. Bronchophony, if detected, is a valuable sign.

Enlarged mediastinal glands may occasion delay and difficulty in arriving at a diagnosis.

DR. HOLT had frequently observed at autopsies the existence of a diffuse purulent meningitis in cases in which there had been no brain symptoms before death.

SECOND DAY—SEPTEMBER 23D.

DR. W. OSLER, of Baltimore, presented "A Specimen of Congenital Heart Disease."

DR. A. SEIBERT, of New York, presented "Further Report on Sub-membranous Local Treatment of Pharyngeal Diphtheria." Injections of fresh aqua chlori (U. S. Pharmacopœia) are made into and beneath the false membranes found on the tonsils and other accessible parts of the pharynx, about fifteen drops being injected into each spot; if necessary, from six to eight injections can be made without causing toxic effects. The syringe for the purpose consists of a metal rod and a small plate holding the points of five hypodermatic needles, all attached to an ordinary hypodermatic syringe. Thirty-five cases treated by this method had already been reported. To these were added thirty-seven treated by others, and thirteen treated personally. Of these fifty cases four were of the scarlatinal variety. The age of the patients ranged from five months to thirty years, thirty-three being under seven years of age. In forty-two cases the injections of chlorine water proved effectual in checking the diphtheritic process; partial effects were observed in four cases, and no effect in three cases.

Imperfect results were obtained in cases in which inaccessible portions of the pharynx were primarily involved. Of the fifty cases, four ended fatally. In all, eighty-five cases treated by sub-membranous injections have been collected. Diphtheritic paralysis was not noticed in any of these cases. Six died, or about 7.5 per cent.

The conclusion arrived at was, that in pharyngeal diphtheria submembranous local injections of fresh chlorine water may, with good effect, be made in all cases in which local treatment is applicable.

DR. H. KOPLIK, of New York, regarded the paper as a perfect bacteriological report as applied to therapeutics, but he expressed the admonition that diphtheria varies greatly in different epidemics. To a question from Dr. W. P. Northrup he replied that he could not say how deep the bacteria could be found, but he believed that the treatment proposed by Dr. Seibert was in the proper direction, as the future would show.

DR. J. L. SMITH, of New York, said that the Klebs-Löffler bacillus does not enter the tissues, but its toxic products occasion the systemic infection. He feared that injury to the bloodvessels might allow the ingress of the poison.

DR. L. E. HOLT, of New York, stated that he had not been successful in the treatment of diphtheria by medicinal means. He expressed the opinion that diphtheria is first a local, then a constitutional disease. Viewed in that light, he believed the treatment by injections of chlorine water to be proper.

THE PRESIDENT stated that he was never sanguine in the treatment of diphtheria. In his experience the results of treatment were the most satisfactory when the false membrane had been confined to the tonsils.

In closing the discussion, Dr. Seibert stated that he had found the Klebs-Löffler bacillus in a large proportion of his cases, which he regarded as conclusive that he had treated diphtheria, and not some similar but different affection. He had only noticed extension of the membrane when he had not made the injections with thoroughness. The injections should reach the submucous tissue, and general treatment should not be omitted. He had rarely found it necessary to use a gag, and if the first injection was thorough he was not compelled to repeat it.

DR. W. D. BOOKER, of Baltimore, read an interesting report of a "Case of Ulcerative Catarrhal Dysentery," giving details of his bacteriological investigations.

DR. C. W. EARLE, of Chicago, presented a paper entitled "Manifestations of 'La Grippe' in Children," which the Society moved be abstracted and read at a future meeting.

The paper of DR. DILLON BROWN, of New York, on "The Treatment of Laryngeal Diphtheria by Calomel Sublimations," was read by title; as was the paper of

DR. F. E. WAXHAN, of Chicago, on "Stricture of the Esophagus Occurring in Children," with report of a case; and that of

DR. F. HUBER, of New York, on a "Case of Pulmonary Abscess; Operation and Recovery, with Remarks."

(To be continued.)

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ORIGINAL ARTICLES.

THE TREATMENT OF FRACTURES OF THE HUMERUS INVOLVING THE ELBOW-JOINT.[1]

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THE special interest that belongs to the subject that has been allotted to me for presentation on this occasion arises from the frequency with which fractures of the lower end of the humerus are followed by more or less diminution of the functions of the elbow-joint, and by deformity of the region or of the limb. It therefore seems proper, and in keeping with the limited time at our disposal, that the discussion should turn mainly upon the causes of these unfavorable results and the means by which they can be best and most surely avoided. It is also assumed that in the selection of this subject for discussion before this Association, the members of which are so experienced and so thoroughly familiar with all its features, the intention was not to invite the expression of novel views, or the presentation of original observations, but to afford an opportunity for an expression of the collective opinion of the Association concerning the best methods of treatment and the prognosis, and thus to supply a guide and protection for less favored members of the profession.

1. CAUSES OF LIMITATION OF MOTION.—Permanent stiffness of the elbow after simple fracture is commonly due to a change in the shape of the articular surfaces, or in their relations to one another, that destroys the coincidence of the axis of curvature with that of motion, and thus limits the range of motion; or, to an overgrowth of bone upon the surface of the humerus that arrests the movement of the olecranon or coronoid process into its corresponding fossa; or, to a more or less extensive ossification of the ligaments and capsule.

As in flexion and extension the normal range of motion at the elbow is great, and since over a large surface the bones composing the joint are in close contact with each other, it follows that a comparatively slight change in shape or deviation of an axis may have a marked effect, and one that will be only partly relieved by the gradual yielding of the ligaments, or by the absorption of opposing bone under persistent stretching and pressure. It is like the defective "centering" of the hinges of a door.

Overgrowth of bone excited by the traumatism is much more frequent in the young than in adults, but so, too, are fractures of the lower end of the humerus, and in this overgrowth we find a cause of limitation of motion that, even if sometimes over-estimated because unreduced displacements are mistaken for it, is yet sufficiently frequent to merit serious consideration. This overgrowth is in part exuberant callus, and in part new bone formed beneath the periosteum adjoining the line of fracture. Exuberant callus is usually formed when the displacement has been great and has not been well reduced, and the obstacles to motion created by it are, therefore, associated with others arising from change in the relations of the joint-surfaces; but it may occur even when the displacement is slight, as in one of my specimens, and in one possessed by the Charité at Berlin (Gurlt, II., p. 107). Overgrowth under the periosteum, extending to a greater or less distance from the fracture, is due to the irritation of the traumatism, and doubtless in part to the implication of the periosteum in the injury to the extent of its stripping-up in the displacement.

The frequency with which limitation of motion follows fracture, and with which it is due to each of these different causes, cannot well be established by statistics. Most of the cases are treated in dispensaries, and the ultimate result seldom forms part of the record. In the out-patient department of my service at the Chambers Street Hospital, which is probably the largest surgical dispensary in New York, receiving about 20,000 cases annually, there are treated each year some twenty cases of fracture of the lower end of the humerus, exclusive of the epicondyles. With a view of determining the relative frequency of the different forms of fracture and the character of the results, I have collated the statistics for the last six years. In a number of the cases some uncertainty arises through doubt as to the correctness of the diagnosis, but in general they show that fractures of the internal and external condyles taken together constituted nearly three-fourths of all, supra-condylar and inter-condyloid, or T-fractures, the remaining fourth. Fractures of the internal and external condyles, when compared with each other, were of about equal frequency, although they differed so greatly in different years, and under different assist-

[1] Read at the meeting of the American Surgical Association in Washington, D. C., September 25, 1891.

ants, that errors in diagnosis seem probable. The supra-condylar and inter-condyloid were of nearly equal frequency, the former being rather the more frequent. The record of ultimate results is too incomplete to be of much service, as it ceases in most cases with a statement of the condition at the time of or shortly after the removal of the splints. In the inter-condyloid fractures flexion was then possible to, or slightly within, a right angle; of the others, in fully one-half no mention of the range of motion is made, while in those in which such mention is made it is usually described as "excellent," "perfect," or "good," and only rarely as "poor."

The specimens preserved in museums are few in number and serve only to establish the nature of some of the various causes. A search through the principal hospital collections of New York has yielded me only two. In one, a supra-condylar fracture, extension is prevented by a broad, flat osteophyte occupying the olecranon fossa; in the other—also supra-condylar, but with displacement—there is a broad mass of new bone behind, which is solidly united to the humerus and also to the tip of the olecranon process. A third specimen, one of fracture of the ulna at the base of the olecranon, shows another form of ankylosis—one by bony union between the opposing bony surfaces; I believe this form is rare, except after suppuration of the joint.

Upon these facts I make at present but one reflection, namely, that as limitation of motion may be caused by a bony outgrowth from the humerus, itself the result of a persistent displacement of a fragment or of the separation of the periosteum, the most efficient way to prevent it lies in an exact diagnosis and reduction of the displacement, and in the avoidance of any subsequent irritation of the periosteum.

A third cause of limitation of motion is found in thickening of the capsule and peri-articular tissues by the products of inflammation. The cause may act temporarily, during and for a limited time subsequent to the period of repair, or permanently by the production of new fibrous and cicatricial tissue, which forms abnormal bands connecting the different members of the joint and limits the extensibility of the peri-articular tissues and their mobility upon one another. As a temporary condition, its anatomical changes are presumably limited to an exudation that infiltrates the soft parts and wholly disappears with more or less promptness after the repair of the main injury and the consequent cessation of the irritation. Except in very rare cases under the influence of a constitutional dyscrasia, a permanent limitation of motion does not follow this form of reaction. In the more permanent form, the anatomical lesions are much more varied and extensive: the soft parts are torn and displaced, the fixed cells proliferate, and the new tissue formed thereby constitutes a true cicatrix that strongly binds together parts whose independence of one another is essential to mobility of the joint. In place of the loose capsule in front or behind that is thrown into folds by movement in one direction and straightened out to its full extent by movement in the opposite direction, we find a short, firm band—an abnormal anterior or posterior ligament—that limits the separation of the points to which it is attached to a distance that is equal to its length. If the osteogenetic tendency is marked, or if the irritation is kept up, this new tissue or this thickened tissue may become ossified in whole or in part. The natural history of such fibrous tissue is known: after its full evolution has taken place, it may diminish in thickness and may be rendered longer and more pliable by the constant repetition of slight pressure. We see abdominal cicatrices yield and stretch under intra-abdominal pressure; we see joints stiffened by injury or disease slowly regain freedom of motion under the natural, unforced use of the limb; and although most of this stretching or mobility is probably due to the yielding of the connections of the cicatrix with the surrounding cellular tissue, yet some of it is the result of the thinning and stretching of the scar itself.

The existence of this cause of limitation, the effects of which are constantly observed after an injury or an inflammation of a joint that has compelled its prolonged immobilization, led to a widespread belief that it arose from, or was materially favored by, the immobilization; and although of late years the opinion has been vigorously, and, in my opinion, successfully, combated by surgeons of large experience and accurate methods of thought, notably by Verneuil and Sands, it still finds expression in the quite general use of passive motion at an early stage, with the object of thereby removing or preventing the cause and its consequences.

The belief appears to have arisen partly by generalization from certain observed anatomical conditions, partly from the unquestionable fact that if a joint is kept movable it will not be stiff, and partly from the clinical observation that many joints that have been treated by passive motion have preserved or regained their functions. The opposing view is based upon the theory, supported by observation and experiment, that immobilization is not in itself a cause of ankylosis—that it is, on the contrary, the most efficient agent we possess against the inflammation which is the primary cause of most stiffness, and that passive motion is powerless to prevent ankylosis when conditions contributory thereto are present. According to this view, passive motion is either harmful or needless.

Let us briefly consider these opinions and arguments, premising that, since in any given case it is practically impossible to say that a joint that has regained its mobility under passive motion would not have done so equally well under immobilization, and that one that has stiffened under immobilization would not have equally stiffened under passive motion, our attention must be mainly given to anatomical and theoretical considerations.

The anatomical facts advanced in favor of the early use of passive motion are the outgrowths of bone that we have seen form and overlap the articular surfaces and mechanically oppose motion, and peri-articular and intra-articular bands that bind the members of a joint together and limit motion by their shortness and inextensibility. With reference to the outgrowths of bone, it is argued that if the member, the movement of which in a certain direction has been prevented by the formation of such a spur, had been previously pressed into the place thus occupied, the spur could not have formed there; or, that if it had been repeatedly pressed against the spur during its period of formation, the latter would gradually have yielded, and, under the influence of the pressure, would have become absorbed. In like manner, with reference to peri-articular and intra-articular bands, it is claimed that systematic passive motion will prevent their formation, or, if formed, will break or stretch them while they are still weak and extensible. If such a statement contained all the elements of the case, the argument and the practice would have to be accepted as sound. But it does not contain all. In respect of the formation of the spur of bone, such a spur, of course, cannot form in a place already occupied by another bone, but the loosened periosteum, by which it is so often produced, is simply pushed to a higher place by the manipulation, and there produces it. Take, for example, such a spur in the olecranon fossa: if by timely extension of the forearm the olecranon is placed in the fossa, the spur does not form there, and extension is preserved; but the spur does form immediately above the fossa, and by carrying the attachment of the posterior capsule to a higher point, and by permitting the union of the lacerated surrounding tissues with the maximum shortening, it as effectually opposes flexion as the nodule whose formation it prevents would have opposed extension. The result in respect of immobility is the same; the difference is only in the attitude in which the joint is henceforth fixed.

With reference to the absorption under repeated pressure of a nodule of bone that is forming or has already formed, the arguments in support of it are wholly theoretical. It is conceivable that while the nodule is still soft, before ossification has become complete, its shape can be modified by pressure, but it is also apparent that such modification can be more surely affected at that time by permanent pressure, by retaining the limb for a day or two in the position in which the pressure is made, than by frequently-repeated pressure; this is both because the modification is maintained and because the irritation that favors the production of bone is less. Clinical experience indicates that such absorption is a very slow process, and that it is favored quite as much by the general tendency to the disappearance of superfluous bone as by pressure.

But it is against the other cause of stiffening, peri-articular thickening and bands, that the advocates of early passive motion claim it is most useful. No delay is permissible; a week, ten days, or a fortnight at the latest, after the injury it must be begun. The limb is taken from its splints, and while the swollen and sensitive elbow is grasped with one hand to afford the necessary support and to keep the fragments from being displaced, the forearm is slowly and "gently" moved back and forth in flexion and in extension. As the object is to stretch or break bands that are forming, the movement must necessarily be carried beyond the points where resistance begins. What is the result? We have all seen it. The patient bears the manipulation with such fortitude as he may possess, but his muscles contract involuntarily and make the range of motion less and less, and, after a few minutes, perhaps only a few seconds, of the torture, the surgeon is quite ready to accede to his prayer that it shall cease, and the limb is replaced in its splint. When the surgeon returns the next day he learns that the pain continued for several hours, and he finds the limb more swollen, the range of easy motion even less. He persists, and is finally arrested either by the refusal of the patient to permit the manipulation, or by the onset of acute inflammatory symptoms, or by recognition of the fact that notwithstanding all his efforts the range of motion is steadily diminishing. He waits a few days, perhaps, and then moves the joint freely under ether—"breaks it up," as we say; but again it stiffens, and again he sees his efforts fail, and at last, weary of the struggle, he abandons it. Thereafter, one of two results follows: either the joint remains permanently stiff, or, after the swelling and soreness have disappeared, it gradually regains its mobility under the natural use of the limb.

The same two results, permanent stiffness and more or less complete restoration of function, are also found after prolonged immobilization. The problem may, therefore, be stated as follows: After an injury a joint becomes tender, swollen, and stiff. In certain cases, under either method of treatment, the stiffness is permanent; in others it gradually disappears. Is passive motion or immobilization

during the first six weeks or two months likely to furnish the larger proportion of the latter class?[1]

The primary cause of the exudation and of the proliferation of connective tissue that are recognized as the anatomical obstacles to motion is, of course, the original traumatism; the secondary cause is the following inflammatory reaction. The severity of the injury is in each case a fixed quantity; the variable factor, the only one that is to be increased or diminished by the treatment, is the inflammatory reaction, and to this, therefore, our attention may be restricted. The question, then, may be stated in this form: How do passive motion and immobilization respectively affect the inflammatory reaction following an injury to a joint? To state the question is to answer it. Rest is universally admitted to be the best antiphlogistic measure that can be applied to an inflamed joint. Under its influence we see the swelling, heat, and tenderness subside, and we know that the amount of cicatricial tissue that has formed is only that which has come directly from the extent of the primary traumatism. The condition may be illustrated by comparison with similar conditions intentionally created by the surgeon, such as supra-condylar osteotomy or osteotomy of the internal condyle of the femur for the correction of a genu valgum. In these two operations the lesions of the bone and soft parts are the same in kind as in supra-condylar fracture and in fracture of the internal condyle, though perhaps less in degree; we invariably treat them by immediate and permanent immobilization, and under that treatment we find that the reaction is slight and the maintenance of function complete. Is there any adequate reason to believe that the reaction and the results after a fracture treated as promptly and in the same manner would be less satisfactory.

It only remains to inquire whether rest has compensating disadvantages to offset its advantage in restricting the amount of cicatrical tissue, and whether passive motion is free from them. An important disadvantage at once suggests itself: namely, that the torn tissues may unite with shortening, and the possibility of this must be admitted. But, will passive motion prevent it? Consider what takes place. When the joint is moved the reuniting tissues are again torn apart and a fresh trauma inflicted; the irritation is thus constantly renewed and extended, and the increasing difficulty in movement that we have clinically observed is explained by the inflammatory thickening of the untorn tissues surrounding those which have been torn. New tissue develops in this thickened untorn layer, and as it contracts in its natural evolution it more and more effectually prevents the separation of the torn tissues until ultimately they unite just as they would have united in the first place, and the only effect of the treatment is to have thickened and strengthened the cicatrical band whose formation it was designed to prevent. Both clinical observation and theoretical considerations indicate that passive motion in this stage not only does not avoid the disadvantage arising from immobilization, but on the contrary, actually increases it. In short, it may be said that the ankylophobia of the surgeon is more dangerous to the patient than the traumatism.

Is there, then, no alternative? Must we accept a certain amount of limitation of motion as unavoidable? In the present state of our knowledge, and in certain cases, I think we must. But its extent can be measurably restricted. Systematic massage has proved to be an efficient means of hastening the absorption of the exudation and the restoration of mobility, as has also permanent elevation or suspension of the limb; and the reunion of the torn tissues with shortening may be opposed by change in the attitude of the limb made at intervals of a few days.

To avoid misunderstanding, let me repeat that in what has thus far been said about passive motion its use during the stage of reaction alone has been in mind—its use during the period in which it is followed by persistent pain and soreness. At a later period, as supplementary to the natural use of the limb, it has its value.

2. DEFORMITY.—Of the various deformities that may result from unreduced displacement after fracture, I shall here speak of only one—that which follows the fracture of either condyle, especially the inner, and is rather widely known as the "gun-stock" deformity. It was carefully studied and described by Dr. O. H. Allis in 1880. It will be remembered that the long axis of the fully extended forearm deviates outwardly from that of the arm, and that as the axis of motion at the elbow is at right angles to the forearm it deviates correspondingly from the transverse axis of the condyles, passing through them at a lower level on the inner than on the outer side. A displacement of the internal condyle upward or of the external condyle downward, their attachments to the radius and ulna remaining unbroken, will annul this outward deviation of the forearm and bring the latter into line with the arm or even incline it to the inner side, and, as the breadth of the condyles is not great, a comparatively slight displacement, say ¼ or even ⅛ of an inch, of the condyle may be sufficient to effect this change. This is the "gun-stock deformity;" it is hardly noticeable when the elbow is flexed, but is very obtrusive and ungraceful when the elbow is extended. In

[1] Isolated intra-articular bands that can be broken by a single movement and have little or no tendency to reunite are rare and may here be disregarded.

the case of fracture of the internal condyle the displacement upward of the fragment can be readily occasioned by pressure upward against the flexed elbow, the pressure being transmitted to the condyle through the olecranon; such pressure is produced when a posterior rectangular splint is used with a sling that passes under the elbow and is short enough to take the weight of the entire limb. If the limb, with a similar splint, is supported only at the wrist this undesirable pressure is not made, for the arm carries the splint, not the splint the arm. Spasmodic contraction of the flexors and extensor of the forearm may also make this pressure. In the case of fracture of the external condyle the mechanism of displacement of the fragment downward is not clear; Dr. Allis thought it might be effected by the pressure of the circular turns of the bandage that secured the limb to the splint—pressing the radius, and with it the fragment, toward the posterior border of the ulna; but this seems to me to be very improbable.

The indication for treatment is clear: reduction of the displacement, if it exists, by pressure upon the fragment, or by abduction of the extended forearm until its outward deviation is equal to that of its fellow, and immobilization by dressings that will not reproduce the displacement.

Treatment.—After this examination of the principles of treatment the details need not long occupy us. The importance of immediate and complete reduction of such displacement as may exist when the case comes under observation is such that whenever a reasonable doubt exists as to the extent of the displacement or the completeness of the reduction, an anesthetic should be employed.

In *supra-condylar* fracture, in which the usual displacement is of the lower fragment backward and upward, permanent traction is usually necessary to overcome the displacing action of the flexors and extensor. This can be effected by vertical suspension of the limb, the patient being kept in bed, or by a weight suspended from the upper part of the flexed forearm while the patient is erect. The former is open to the objection that it permits an angular displacement, the lower fragment being inclined backward, and that it requires confinement to the bed; but there is no doubt in my mind of the advantages that accrue from its use in the first fortnight after the injury; this is especially true of compound fractures, for it diminishes the reaction, permits the usual bulky dressing that is so desirable for the protection of the open wound, and at the same time secures a more thorough and persistent reduction than can usually be maintained by splints placed over such a dressing. Suspension is made by strips of adhesive plaster placed along the front and back of the forearm and attached to the support by India-rubber cords, or a weight and pulley. In simple fractures the other method may be employed from the beginning, and in compound fractures after they have become simple under suspension. An efficient procedure is to encase the limb in plaster-of-Paris from the hand to the axilla, with the elbow at a right angle, support the wrist by a sling, and suspend a weight of not more than five pounds from the flexure of the elbow. If swelling is feared, the encasement may be limited to the forearm and made continuous with anterior and posterior plaster splints along the arm.

In *inter-condyloid* fracture with marked separation, there is no practicable means surely to maintain reduction, and considerable limitation of motion is to be expected. The varying contractions of the muscles, the pressure of the enveloping fascia, increased by the swelling, and the impossibility of direct control of the fragments, combine to make the result largely a matter of chance. Experience with compound fractures in which the shiftings of the fragments could be recognized by sight and touch, has impressed me with the exceptional difficulties presented by this variety of fracture; in one case (compound) I felt constrained to pass a long steel pin transversely through both condyles and the long projecting end of the upper fragment, for in no other way could they be kept in apposition. As even in simple cases the reaction is marked, complete encasement in plaster-of-Paris during the first week is dangerous, unless made so loose that its support is inefficient. I prefer a broad, heavy posterior plaster splint, extending from the axilla to the hand and covering about two-thirds of the circumference of the limb, the elbow being flexed at a right angle; while hardening, it can be so moulded by pressure about the elbow that it will do much to maintain the fragments in place. Traction by a weight can be used as in supra-condylar fracture.

In fracture of *either condyle* the habitual method of treatment is by a posterior rectangular splint of metal or plaster, with the substitution in many cases of plaster encasement during the second week. The forearm is supported across the chest by a sling *at the wrist* (within, not outside, the splint), and the dressing should be worn for about a month. Immobilization in full extension of the elbow has been employed in order more surely to prevent the displacement that causes the gun-stock deformity, but the method has certain disadvantages that will probably prevent its general acceptance. There is sometimes a marked tendency to displacement forward and tilting of the fragment (internal condyle), and the swelling of the dependent hand often causes much discomfort. The latter disadvantage does not appear when the patient is kept in bed. It has seemed to me to be advisable in some cases to

employ this method for the first ten days or a fortnight and then to substitute flexion at a right angle, hoping that by that time the fragment will have contracted adhesions that will prevent its easy displacement upward.

With fracture of either condyle is sometimes associated dislocation of the bones of the forearm and the fragment from the humerus; this complication is more frequent with fracture of the internal condyle, the dislocation being backward and upward, and the head of the radius resting behind the external condyle. Under such circumstances retention may present special difficulties; they appear to be best met by immobilization, with the elbow flexed well within a right angle.

If the case is one to which the necessary time can be given, daily massage of the limb may be advantageously employed to hasten convalescence. It should be made very gently at first, and the pressure gradually increased. The sittings may occupy ten or fifteen minutes, and the rubbing should be from below upward. Care must be taken to avoid giving pain, either by too great pressure or by movement of the joint.

For the reasons already given it may in some cases be advisable to change the angle of flexion from time to time; and in any case in which absolute fixation or great limitation of motion is expected, that attitude should be given to the joint in which, if stiff, the usefulness of the limb will be greatest.

After-treatment.—The length of time for which the splint must be worn is greatest—about six weeks—for the supra-condylar and inter-condyloid fractures, and about four weeks for those of either condyle. After removal of the splint the limb should, for a few days, be supported in a sling, and exercised in slight movements. If the increase of the range of motion under natural use should be slow, it may be hastened by passive motion or by special exercises, as by carrying a weight to increase extension and by India-rubber traction from the wrist to the shoulder to increase flexion.

A STUDY RELATIVE TO THE FUNCTIONS OF THE REPRODUCTIVE APPARATUS IN AMERICAN INDIAN WOMEN.[1]

BY ANDREW F. CURRIER, M.D.,
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A CAREFUL examination of the Indian question as it is presented to the people of the United States, will lead to the conclusion that the Indians must submit either to civilization or extermination. Civilization and savagery cannot coexist. In close contact savagery always has to yield. To break up tribal distinctions, give the Indians land in severalty, educate them, abolish polygamy, barbarous costumes, and heathenish practices, and to keep whiskey away from them, is the present policy of the Indian Bureau, and it is wise, just and hopeful.

The author's investigations were made with the approval and coöperation of Hon. Thomas J. Morgan, Indian Commissioner, the late Surgeon-General, Dr. J. D. Baxter, and the present Surgeon-General, Dr. Charles Sutherland, to whom he wishes publicly to express his gratitude. He also desires publicly to thank the Indian agents, physicians employed at the Indian agencies, and army surgeons, who have coöperated with him and advised him, and without whose generous assistance the studies could not have been made. The data were obtained in the face of the greatest obstacles, for Indians are ignorant, superstitious, prejudiced, and suspicious, and the time required in many instances was considerable, perhaps more than was warranted by the results to be obtained. From twenty-eight Indian agencies and army posts interesting facts were gathered, and since all the correspondents were in immediate communication with the Indians, some of them for many years, and all being entirely reliable, the information may be considered trustworthy. The Report of the Indian Commissioner for 1890 was also freely consulted, and was the source of much valuable information.

The subjects upon which information was sought included menstruation, conception, gestation, parturition, the puerperal period, the menopause, sexual appetite, pelvic disease, including venereal and malignant diseases, and a variety of kindred topics. In children the great frequency of glandular, including venereal, disease was noted, and the great mortality among infants. Puberty was reached in the southern tribes—the Apaches, Mojaves, and others—quite early, the average in a given number of Apaches being $12\frac{3}{5}$ years. In the northern tribes it was reached later, the average in a given number of Cheyennes and Arapahoes being 17 years. In a large number of Sioux the average age was 15.11 years. In most of the other tribes the average age was under fifteen, and it is believed that savage life *per se* neither hastens nor retards puberty, but that climate, occupation, and hereditary tendency were the factors of greatest importance.

The advent of puberty is celebrated by barbarous dances in some of the tribes. At the Quabaw Agency (Ind. Ter.) the "stamp dance" is thus celebrated. At Round Valley Agency (Cal.), the menstruating girl joins in a furious dance with older women, keeping it up until thoroughly exhausted. At the Neah Bay Agency (Wash.) the menstruating girl fasts three days, then is stripped naked and

[1] Abstract of a paper read before the American Gynecological Society at Washington, D. C., September 23, 1891.

washed in a stream in the presence of her friends and relatives. After this her parents give a *pil potlach* (giving away of blood), which is very disgusting, and is said to be somewhat of the nature of a birthday party.

With very many Indian women, especially the more degraded, the coming, course, and going, of menstruation were alike matters of indifference; they neither knew nor cared as to its duration. At four agencies the duration had been observed, and the limits given were two and six days. Seldom was there any pain in menstruation, though in some of the tribes it was said to be present with the first menstruation, but rarely afterward. Among the civilized Indians painful menstruation was not infrequent. The quantity of blood lost at menstruation was almost invariably a matter of indifference. Only a single case of amenorrhea was reported.

The menopause seldom causes any trouble. The age at which it comes shows as wide a diversity as it does among civilized women, and there was also the same variety as to duration. It may come abruptly, or it may require several years.

Marriage is said to be mainly a matter of convenience or inclination in most of the tribes, with nothing especially serious or binding about it, either party leaving the other as the notion may prompt. Polygamy is still common in some of the tribes, though the Government is endeavoring to break it up. Virtue and chastity are ignored altogether, or but lightly esteemed, in all but a few of the tribes. A change for the better in such matters is most marked, and most gratifying in some of the localities that have been under educational and religious influences. Cherokees are said to be more virtuous and more strict in regard to the marriage relation than whites.

Among the Klamaths (Oregon) young men are not infrequently married to old women.

Among the Crows and Assiniboines marriage arrangements are between a girl's parents and her suitor. The latter pays a horse for her, or some other object of value; the girl then measures the man for a pair of moccasins as a sign of acceptance, goes to his lodge, and is henceforth his wife. The marriage and divorce customs among the civilized Cherokees are much the same as among intelligent whites. The ceremony may either be a simple agreement between the man and the woman, or the more formal one of the Church or the State.

Marriage in most tribes is consummated very early in life, at seventeen or under, in many cases almost as soon as puberty is reached. Conception and gestation are favored in a majority of the tribes by an ardent sexual appetite and an out-of-door life, and large families of children are of frequent occurrence. Abortion seldom occurs as the result of the severe labor and other trials to which Indian women are all subject, but is common enough as the result of syphilis and criminal interference. Among the more degraded and physically inferior tribes the families of children are small. In almost all the tribes the infantile mortality is very great. The struggle for existence on the part of an Indian baby is a severe one. Some of the women drink decoctions of certain herbs to prevent conception. The Crows and Assiniboines use the most violent means for producing abortion. One of these consists in thrusting a sharp stick into the vagina and womb, thus rupturing the ovum. Another consists in causing the patient to rest her belly against the top of a stake driven into the ground, and about two feet high, and to whirl around upon this until the fetus is expelled. In yet another the patient lies on the ground upon her back, a large board is laid across her belly, and upon this two or three of her female friends stand or jump until the blood gushes from the vagina; or the belly is kneaded or tramped upon until the fetus is expelled.

Among these Indians last mentioned, when a baby is born the umbilical cord is cut with a *new* butcher-knife, the stump is well greased, and the infant is then thrust into a laced sack made of blue cloth, containing pulverized bull's manure, or the inside bark of the cottonwood tree. This lining, with the child's discharges, is changed three or four times daily. When the stump of the cord drops off it is preserved in a beaded pouch, and worn about the neck or waist as long as the person lives.

Parturition is usually a natural and easy process with Indian women. One of my correspondents graphically said it was about as easy as for a cow to have a calf. With many women no assistance is required or tolerated. With others, midwives are employed, and these manifest varying degrees of ignorance and superstition. Occasionally an herb-doctor will be called to attend a woman in confinement, but as a rule no man, whether a physician or not, is expected or allowed near a woman at such a time. Where the Indians are becoming educated and civilized they are gaining more and more confidence in white physicians, and occasionally one will be called to attend a confinement, especially if any complication has arisen. The favorite position during labor is the kneeling one, the arms, chest, and head resting upon a support of some character, but by many the squatting position is preferred. The ease with which delivery is accomplished in these positions, and the simplicity of the whole procedure, is not without suggestiveness to those of us that are endeavoring to carry out the multitudinous details of modern antiseptic midwifery. The lying-in chamber and the lying-in bed, for the tribes that have had little contact with civilization, do not exist.

Delivery takes place in the open air, in the bushes, by the side of a stream, perhaps when the tribe is on a march. The regular duties of the squaw are not long interrupted by parturition, and if her party is on the march she hurries on to overtake them after the birth of her baby.

In some tribes it is the custom to aid in the expulsion of the placenta by tickling the parturient's nose, thus provoking sneezing.

Among the Sacs and Foxes the placenta is wrapped in the blanket on which delivery took place and secured to a tree to keep it from wild animals. Should a wolf or coyote eat it, it is believed that the child would resemble such an animal, and eventually be devoured by it. The placenta must not be thrown into the river, lest the child should resemble a fish, or be drowned and eaten by fish.

The accidents of parturition are few, occurring perhaps as frequently as in the lower animals. The physicians at the agencies have reported cases of faulty presentation, retention of the placenta, and rupture and procidentia of the uterus. The Indians are just beginning to appreciate the value of skilled assistance for such emergencies.

Puerperal diseases are said to be unknown among Indians. Malignant disease is of rare occurrence, especially among the full-bloods. Cancer of the breast was reported, but not of the uterus. Of course, it is possible that the latter might exist, unknown to any but the patients, owing to their extreme reticence concerning disease of the genital organs. For the same reason it is impossible to say to what extent pelvic disease may exist among these women. Cases were reported in which there was deformity of the uterus, ovarian pain, abdominal dropsy, leucorrhea, and gonorrhea, so that it cannot be said that pelvic disease does not exist among them. It is probable that they are less susceptible as well as less sensitive to such diseases than civilized women. Those that are becoming civilized, or are already civilized, suffer from pelvic disease to about the same extent as the whites. Venereal disease was said to be very prevalent, and doubtless it has much to do with the feebleness of the children and the high rate of mortality among the infants.

CONCLUSIONS.

I. PUBERTY.—The mere fact of living in a savage state has not much to do with the early or late appearance of puberty. The Apaches and Mojaves of the hot and desert regions of Arizona mature young, but so do the females of Southern Europe and of the tropics; the law is general that both animals and plants mature early under a tropical sun. The females in the northern tribes—the Cheyennes, Arapahoes, Crows, Assiniboines, and Sioux—develop more slowly, as is the case with women in Northern Europe.

II. PHENOMENA OF MENSTRUATION.—Savage life with its vicissitudes and hardships does not usually interfere with the regular recurrence of the monthly flow. Influences that would disturb or check it and possibly produce permanent injury to a woman in civilized life, seem to have no such effect upon Indian women. Excessive menstruation is practically unknown. On the other hand, there are occasional instances of dysmenorrhea or amenorrhea in connection with disease or deformity of the pelvic organs, so that savage life does not necessarily furnish immunity from such experience.

III. THE MENOPAUSE.—Indian women are exceptionally free from the nervous and vascular disturbances that so commonly accompany the menopause in civilized women. The duration of the menopause varies as greatly as it does in civilized life. It usually comes between the fortieth and fiftieth years, but not infrequently is delayed beyond the fiftieth year. Many gestations occurring in rapid succession, continuous hard work, and the exposure and physical suffering incidental to a savage life do not tend to shorten the menstrual and child-bearing periods.

IV. MARRIAGE AND THE SEXUAL APPETITE.—The social condition of Indian women is an anomalous one for this age and country. They must bear the burdens, do the drudgery, bring forth and rear the children, and then, perhaps, be cast aside at the merest whim of their husbands. Marriage among American Indians means, as a rule, communism, polygamy, unrestrained lust, according to circumstances—all of which must, of course, be abandoned as they emerge into civilization. Sexual appetite in Indians is the uncontrolled and uncontrollable desire of the wild beast, or in women of the degraded and debilitated tribes it is an indifference, except as it may be associated with the idea of gain.

V. CONCEPTION AND GESTATION.—The habits and manner of life in the more vigorous and well-developed Indian women are favorable to fruitfulness. But the facts that so many children die in infancy, and that the restraints of civilized life are fatal to so many more, show that the race is not a hardy one. The unhygienic condition of the homes in many tribes, their filth and degradation, and in others the frightful abuses of the abortionists, are further tending to weaken the race and impair its future.

VI. PARTURITION.—The ease with which parturition is accomplished among Indians is an interesting fact. It must not be overlooked that the squatting or kneeling posture that they assume during labor is more favorable to muscular effort than the positions with which we are familiar in the lying-in

chamber. This is a suggestive fact. So, also, is the apparently total absence of puerperal disease among Indians. This is the result of pure air and plenty of exercise, and not of antiseptics or even ordinary hygiene. The quick recovery and return to their usual duties of Indian parturients also suggests the possibility that we sometimes unnecessarily make invalids of our obstetric patients. Accidents occasionally occur, just as they do among animals, Nature's work being sometimes far from perfect. This means death to the mother or child, or to both, unless an intelligence beyond that of the savage can be summoned to avert it.

VII. Pelvic Disease.—That pelvic disease has not been treated among Indians does not prove that it does not exist. Those diseases that result from infection, deformity, mal-development, and faults of circulation probably exist, but they will go untreated, and more or less unheeded, until the suffering caused by them becomes keener and confidence in educated physicians stronger. The malignant diseases of the reproductive organs are almost unknown among Indians. This shows that neither privation, nor hard work, nor exposure, nor giving birth to many children, necessarily result in the neoplasms that so often afflict civilized women.

VIII. Venereal Disease.—Both local and constitutional forms of venereal disease abound among Indian women. The frequency of syphilis, coupled with the great mortality among infants, and the great prevalence of glandular and pulmonary disease among many of those that survive infancy, are evidences of the inroads that venereal disease has made upon Indian vitality.

Finally, Indian women in the savage state undergo less physical suffering in connection with the reproductive apparatus than do civilized women. As a rule they menstruate, bear children, and pass the menopause with the minimum of discomfort. This is due to three causes: (1) Natural or racial insensitiveness compared with the far more sensitive Caucasian; (2) abundance of exercise; (3) life in the open air. With its complex conditions, civilized life will always present obstacles to the performance of the functions peculiar to women with the same ease with which they are experienced by savages, and when Indian women exchange the savage for the civilized state they must necessarily adopt also some of the ills that are inseparable from the latter.

The Inter-Continental American Medical Congress.—The Committee on Permanent Organization of the Inter-Continental American Medical Congress will meet at the Lindell Hotel, St. Louis, October 14, 1891. It is intended at this meeting to (1) adopt a constitution, (2) elect permanent officers, domestic and foreign, (3) select time and place of meeting. Members of the auxiliary committees of the different States are invited to attend.

RETARDED HEREDITARY SYPHILIS.[1]

By ROBERT B. MORISON, M.D.,
Dermatologist to the Johns Hopkins Hospital Dispensary.

For some years Fournier and his followers have kept constantly before the minds of syphilographers the possibility of syphilis remaining so latent as an hereditary disease in the human being, that it often does not appear until long after birth. Symptoms of this late-appearing form of syphilis are coming more and more to be recognized, and, when followed by cure after treatment, seem to point to the fact that a correct diagnosis has been made. Fournier, in preparing his statistics, calls especial attention to patients whose parents were known to have been syphilitic. He does not place so much value on those cases in which there is a doubtful previous history. Nevertheless syphilis is considered hereditary, if it be possible to exclude the certainty of its acquirement after birth. It becomes retarded hereditary syphilis if the child is born apparently healthy.

In my dispensary and hospital practice I have lately made a habit of recording as retarded hereditary syphilis those cases of children said to have been born healthy, but which had gradually become sickly, fretful, with their teeth unhealthy, with ulcerations on the head, buttocks, or nails, and in whom there is an *inaptitude native à la vie*—the "descendant indirecte" of Fournier. I have generally been unwilling to trust the previous history of the parents as given by themselves; therefore in cases in which it is justifiable they are put upon antisyphilitic treatment. The results have been satisfactory—more so than when such cases were counted among the scrofulodermata and dosed with all sorts of tonics, including cod-liver oil.

In looking over the last year of dispensary practice I find that out of 1887 cases treated, there have been 31 put down as retarded hereditary syphilis and 5 as scrofuloderma. The diagnosis of the latter cases was made after want of success with antisyphilitic treatment. Eight years ago all such cases were included by me under scrofuloderma. Among the negro children, of whom I see a great number and in whom the symptoms are never very distinct, mercury acts especially well. Under its influence their bones harden and straighten and their glands become less marked. But since in the healthy negro the glandular system is better developed than in the white, the size of the glands does not play an important factor in the diagnosis. In private practice it does not seem so hard to get at the true and previous history of the parents, especially of the father.

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[1] Read at the meeting of the American Dermatological Association held in Washington, September, 1891.

In December, 1890, a young lady, aged twenty-seven, was brought to me by a country physician. He had treated the father of the lady as a young man, before marriage. The history of the father's disease was without doubt that of syphilis. Several of the children had died immediately after birth. The father was never well and the mother had been an invalid since marriage. Fifteen years ago the daughter in question, who was then twelve years of age, suffered much from so-called growing-pains, nodules appearing upon each tibia. Her teeth became so bad that all were removed. She had the syphilitic aspect that the English dwell upon—the constant restlessness of the eyes, with dark lines underneath them; the clay-like color of the complexion; pale, thickened lips; absence of teeth, and a small quantity of dull, unhealthy looking hair. Ulcers formed on the legs, arms, and body soon after puberty, and they have been coming and going, healing and breaking down, for these fifteen years. She had taken many medicines in many places, including much mercury, potash, and arsenic. After treating her for several months with such remedies, I stopped all internal medicine, excepting a little quinine, and gave her as a dressing a saturated solution of pyoktanin in distilled water. She lives at a distance, and therefore I seldom see her, the last time being in June. At that time, under the influence of the pyoktanin the ulcerations had all healed, no new ones appearing. She said that she had not been so well for many years.

This case seems to me one of retarded hereditary syphilis, and it is instructive, inasmuch as none of the antisyphilitic remedies seem to have been so active as usual, though how far the disease might have gone without them cannot be determined. Their want of activity in this case does not seem to impair the diagnosis, since mercury and potash cannot be given in certain cases of acquired syphilis, although there is no doubt of the diagnosis.

The condition of the teeth upon which Fournier dwells at so much length cannot, it seems to me, be of so much importance for us in our well-to-do classes as it is in Europe. The care taken of the teeth by our people and the skill of our dentists, seem in many cases to remove the chance of disfiguration that usually follows hereditary syphilis. At least it has been my experience that the appearance of the teeth in people of this country is less a factor in diagnosis than it is in Europe.

Nevertheless, the teeth do frequently show characteristic changes that point to a previous history. In one well-born family I found the teeth of all the children over sixteen notched, discolored, and irregular. The father had syphilis before marriage, the mother had been an invalid ever since. There were other symptoms, such as ill-defined pains, glandular enlargement, and chronic sore-throat. Nothing relieved them so much as small doses of mercury. All these children were said to have been born healthy, and remained so for many years afterward.

It seems to me that it is proper for a physician to look upon syphilis as the latent cause of a great many cases of uncertain nature. We cannot prove its existence by the presence of any yet discovered bacteria, though some microscopists claim that they can make a diagnosis of syphilitic tissue as readily as they can that of cancerous or tuberculous tissue. The use of the microscope is not necessary when the symptoms disappear under treatment. The prognosis seems to me to be much better in retarded hereditary syphilis than in hereditary syphilis. A child born with hereditary lesions seems to stand less chance for life than the one in whom they appear in later life.

MEDICAL PROGRESS.

Nephrectomy for Carcinoma. — Krönlein (*Corresp.-bl. für Schweizer Aerzte*, August 15, 1891) presented to the Society of Physicians of Zurich, a kidney obtained from a woman, forty-four years old, who for a considerable time had presented symptoms of floating kidney. Subsequently hematuria manifested itself, and a large tumor was detected in the right side of the abdomen. Operation having been decided upon, a lumbar incision was made and the kidney separated from the peritoneum without injury to the latter. In isolating the pedicle the renal vein was torn. The vessel was speedily caught and ligated. Drainage provided for, the wound was sutured. The case pursued an even and afebrile course. There were no uremic symptoms. The tumor had not invaded the connective-tissue capsule of the kidney, so that the prognosis was favorable. Five weeks after the operation, the patient was dismissed, cured. Microscopical sections showed the tumor to be a papillary carcinoma. Krönlein stated that he had removed the kidney in three cases for carcinoma.

Acute Yellow Atrophy of the Liver. — Burckhardt (*Corresp.-bl. für Schweizer Aerzte*, August 15, 1891) reports the case of a widow, thirty-two years old, who, after profound emotional depression, developed jaundice, followed in turn by delirium, with but slight elevation of temperature, death taking place in coma. The autopsy confirmed the diagnosis of acute yellow atrophy of the liver. Burckhardt takes occasion to controvert the view that acute yellow atrophy is always the result of phosphorus-poisoning. In the former, the primary enlargement of the liver and the colicky pains of the latter are wanting, while the maniacal manifestations of acute atrophy are absent in phosphorus-poisoning. Examination has thus far failed to find phosphorus in the organism in acute yellow atrophy. From the absence of fever in, and the sporadic appearance of, acute atrophy, Burckhardt is unwilling to place it in the category of infectious diseases. He would rather ascribe the symptoms to the absorption of abnormal products developed in the course of parenchymatous inflammation of the liver induced by an unrecognized noxa.

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SATURDAY, OCTOBER 3, 1891.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Despite the prostrating temperature under which the meetings were held, and notwithstanding the sad effects of the drinking-water, there was a fine attendance of members and visitors from all parts of the country and from Europe, and the general verdict concerning the Congress is one of complete satisfaction. In attempting any critical estimate, there at once stand out two salient phases that distinguish the disposition and labors of all the bodies. The first refers to the fact of the work done; the second to its conservative character.

If anyone went to Washington with the expectation of having "a good time," he must have felt much out of place there. It was almost painfully apparent that these men were pledged to work, not to pleasure. There was everywhere an air of seriousness and earnestness, undoubted and persistent. The meetings were called to order on time, and without form or sentiment the business proceeded as if the recess had been but three minutes, instead of three years. The addresses of the presidents of the different associations were concise and to the point; each seemed to feel himself an introducer who dared not long delay the introduction. Taught by experience, by necessity, and by desire, verbosity was "conspicuous by its absence;" and the rigid condensation and epitomization of results, whilst giving severe work for thought and attention, allowed the freest expression to the many and diverse-minded sharers in the great debate. For downright tireless work, Drs. Judson, Ridlon, and their associates must be awarded the prize. By the reading of sixty-seven papers (twenty-four or more on Pott's disease!) it is to be hoped that the ghost of good old Dr. Pott was enlivened, and that no member by long sitting arose with any but the most temporary of spinal curvatures or spastic paralyses.

It is also equally plain that the quality or general character of the work done indicated the dominance of discrimination, criticism, or conservatism. The fine oration of Dr. Mitchell struck upon the central idea of modern medical science. Progress in instrumental precision is but the exponent of progress in mental precision, both being necessary prerequisites of therapeutic and prophylactic power. There was at this meeting no pronunciamento of ill-digested and unproved theory such as harmed the Berlin Congress, and unjustifiable enthusiasm was held in tightly reined check by the clear-cut determination to adhere to fact, to test and re-test with cold judgment. It is evident that to meet coming problems and to square itself with the scientific spirit that is filling and controlling all human studies and labors, Medicine must look to her premises and foundations, re-prove supposed axioms, strengthen bases, and scrutinizingly examine every part of her growing body of truth.

In accordance with the new spirit there was observable a saner return from the bacteriomania and pyophobia of the immediate past; it begins to become apparent that all human ills are not caused by "bugs," nor curable by corrosive sublimate. According to Prof. Welch, it would even seem that the frightful pessimism of the latter-day pathology may give way to something of optimistic trust in a goodness even behind morbid processes, and in a purposive wisdom even in suppuration. Essentially the same great truth was reached by Prof. Roswell Park, who, with clear logic, summarized in his able way the advanced science of to-day as to the principles of sepsis, antisepsis, and asepsis.

"THE NEWS" AND THE CONGRESS.

It is with pardonable pride that The News calls the attention of its readers to its work in reporting the four days' sessions of each of the fourteen asso-

ciations and of the general meetings. Despite the many difficulties and the great labor necessarily attending such an endeavor, it is believed that no item of scientific interest will fail of mention, and that exceptional accuracy and authority have been obtained. For the unvarying and unexpected kindness manifested to THE NEWS, its readers will join us in grateful recognition to the secretaries and society members who in varied ways have generously aided us.

But following the meager reports that at best are but glimpses of the feast, THE NEWS promises its readers the substantial reality of a large number of the original papers, to be published in full as soon as space can be found. The number of such manuscripts that without solicitation have been kindly given us, though creating for us a genuine "embarrassment of riches," will doubtless make those of our readers who could not attend the Congress feel somewhat as if it was hardly necessary to have done so.

WASHINGTON AS A MEETING-PLACE.

IT is with regret that one must express a single but weighty objection to the city of Washington as an appropriate meeting-place, at least for medical conventions. For probable reasons that we should tremble to detail, the gastro-intestinal apparatus of the political congressman must be more resistant to the Washingtonian microörganisms of drinking-water than that of the medical congressman, or the former would long ago have voted a score or more of millions to supply a less noxious quality of water. At one dinner-party in the course of the recent Congress, but four out of the large number of those invited were able to be present, and probably from 50 to 75 per cent. of those attending the Congress were afflicted with a viciously severe diarrhea.

The preceding criticism becomes the more pointed because in other respects—the beauty of the city, the numerous objects of interest to the visitor, the commodiousness and excellence of her hotels, and the hospitality of her citizens—Washington is exceptionally well adapted for the purpose in question.

To repeat the feeling language of one of the afflicted—from a private letter of one of our great surgeons: "What a scandalous reflection upon this country's intelligence that citizens cannot visit the Capital without being prostrated by disease due to filthy water! If there is pure water within one thousand miles of the city the National Government ought to secure it."

Will not our colleagues who are also governmental officers or *Geheime-Räthe*, "govern themselves accordingly."

THE REPORT OF THE COMMITTEE ON FRACTURES OF THE FEMUR.

IN the last number of THE NEWS, containing the full report itself, there was a failure to mention that the report of the Committee on Fractures of the Femur, of which the chairman, DR. STEPHEN SMITH, was virtually the author, was unanimously and heartily adopted by the Surgical Association. Emanating from a committee the members of which are men of such distinction and authority, coupled with the fact of the intrinsic importance of the subject and its medico-legal bearings, this clear and precise statement upon the peculiarly involved and difficult points discussed, becomes of exceptional value and significance, to both the medical and legal professions at large.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Twelfth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from p. 367.)

FOURTH DAY—SEPTEMBER 25TH.

The committee to which was referred the suggestions in the President's Address offered the following resolution, which was adopted:

"*Resolved*, That the President appoint a committee, with authority to confer with the friends and admirers of Professor S. D. Gross, and with the profession at large, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to Dr. Gross in the City of Washington."

The President announced that he would name the committee in a few days.

DR. LEWIS A. STIMSON, of New York, then read a paper on the "Treatment of Fractures Involving the Elbow-joint," which appears in full elsewhere in the current number of THE MEDICAL NEWS.

In the discussion, DR. N. P. DANDRIDGE, of Cincinnati, referred to two cases occurring under his observation. In one, of simple fracture from great violence, in which the arm was treated in a position of almost complete extension, non-union occurred. In the second, after fracture at the elbow-joint a projection of bone pressed upon the median nerve, causing severe pain and atrophy of the muscles in the distribution of the nerve. The case was seen three months after the accident. Removal of the bone was followed by relief of the pain, and a gradual restoration of the function of the muscles.

Dr. R. A. Kinloch, of Charleston, thought that in simple fractures about the elbow, if seen early, and the ordinary principles in regard to the treatment of fractures be applied, the result would be good. Probably in a large number of cases some restriction of movement was to be expected. The most important element in the treatment is the proper reduction of the fragments. This should be done at once, an anesthetic being employed if necessary. The proper reduction of the fragments is determined by testing the functions of the joint. The second indication is to retain the fragments in proper position. If the case is treated with intelligence, it makes little difference how the splint is applied, or whether the forearm is flexed or extended. The position is to be determined largely by the peculiarities of the individual case. Dr. Kinloch was inclined to favor the extended position. He thought that early passive motion did more harm than good. If the parts have been properly reduced and held in position, and there is no danger of subsequent trouble, passive motion may begin in three or four weeks.

Dr. E. M. Moore, of Rochester, said that in a fracture of the internal condyle, the cause of the displacement is the flexor muscles, and to relax these muscles the arm should be placed in the flexed position. In fractures of the external condyle he has also found this position preferable; for when the forearm is flexed, the dense fascia on the front of the arm is rendered tense, and acts as an efficient splint. He objected to the extended position exclusively. He treats all fractures about the elbow-joint, with the exception of fractures of the olecranon, in the rectangular position for the first ten days or two weeks. Lateral splints are used with the object of pressing the fragments together after the tenth day. The fracture is dressed every other day; the angle of the splint being changed a little each time, so that the arm passes from almost complete flexion to almost complete extension. Since adopting this mode of treatment he has never had the slightest difficulty in any case.

Dr. James McCann, of Pittsburg, said that it was not always easy to determine the exact nature of fractures about the elbow-joint, even with the patient under the influence of an anesthetic. While the patient is under the anesthetic the preliminary dressing should be applied. He recommended the use of the internal angular splint, preferably that suggested by Dr. Packard. He did not favor the use of passive motion at an early stage. Passive motion should not be resorted to prior to the twentieth day.

Dr. John B. Roberts, of Philadelphia, thought that the teaching advocated by some of the speakers was to a large extent dangerous and incorrect—that is, that injuries about the elbow-joint should be treated in the flexed position. He believed that, except in unusual cases, these fractures should be treated in the extended position, according to the doctrine advocated by Dr. Allis; in this way the gun-stock deformity is avoided. He now approached fractures of the elbow with the same certainty of getting a good result as he did fractures of the lower end of the radius.

Dr. S. H. Weeks, of Portland, dwelt upon the fact that, with few exceptions, all authorities advised the flexed position in the treatment of fractures about the elbow-joint. Until there was more positive evidence of the value of the extended position, he thought it better to continue to treat these fractures in the flexed position. After two weeks of treatment, he employed passive motion in a modified way, the splints are removed and the joint moved gently, but not sufficiently to cause pain. This simply alters the relations of the parts without doing any damage.

Dr. L. McLane Tiffany, of Baltimore, thought that as good results were reported from various dissimilar methods of treatment, we must conclude that the prognosis of elbow injuries depends more upon the patient than upon the surgeon. Fracture of the elbow is rare in adults and common in children; and in children, with reasonably good treatment, there should be a good result, so that by the time adult age was reached the motion would be almost perfect. In the adult, the prognosis is more grave. He had had good results both with the flexed and with the extended position. In compound fractures, the secret lies in the relief of tension, irrespective of the apparatus employed. Incision up and down the arm through the strong fascia should be made as freely as required.

Dr. Albert Vander Veer, of Albany, read a paper on "Retro-peritoneal Tumors: their Anatomical Relations, Pathology, Diagnosis, and Treatment," the full text of which will be published in the *American Journal of the Medical Sciences*. He reported three cases, in two of which the tumors originated in the capsule of the kidney, and in the third in the supra-renal capsule. Retro-peritoneal tumors, even when typical, can never be said to be absolutely benign, for, although they may not give rise to metastases or to infiltration of surrounding tissues, or when removed they may show no tendency to recurrence, yet from the great size that they attain, the discomfort that they occasion, and from the tendency to undergo degeneration that they exhibit, they cannot be considered innocent. The tumors found in the kidneys of young children are, for the most part, mixed tumors, chiefly myo-sarcomata. In the diagnosis of retro-peritoneal tumors, diseases and neoplasms of the uterus and its appendages, of the liver and gall-bladder, of the spleen, pancreas, and of the kidney, as well as abdominal aneurisms and tumors of the mesentery and of the abdominal walls, are to be excluded. Without operative interference, a fatal termination is inevitable. The mean duration of life after the discovery of the tumor is not more than nine months. The results of operative interference are promising. The immediate mortality following operations is necessarily high. The fatality has been greater after incomplete operations than after those in which the tumor was completely removed. Czerny states that "in all cases operative interference can safely be undertaken; when the tumor is no longer encapsulated, the incision had better be closed; otherwise the growth should be enucleated."

Dr. De Forrest Willard, of Philadelphia, read a paper on "Intra-thoracic Surgery: Bronchotomy through the Chest for Foreign Bodies Impacted in the Bronchi," which is to appear in the *American Journal of the Medical Sciences*. He detailed a series of eight experiments made upon dogs by the introduction of foreign bodies into the air passages, followed by various procedures for the removal of the bodies. These experiments showed that in dogs the bronchus can be reached through the chest-walls,

from in front or behind, but being in such close proximity to important structures incision is difficult and dangerous. The operation is attended with great shock from collapse of the lungs, and, until the technique is improved, is liable to result in immediate death. Collapse of a healthy lung is more serious than collapse of a diseased lung. The difficulties and dangers of the operation are shock, suffocation from pulmonary collapse, pulmonary hemorrhage, injury of the pneumogastric nerve, and exaggerated movement of the root of the lung induced by the great dyspnea. Closure of the bronchial incision takes place slowly, and is attended with danger. To leave it open would be followed by the entrance of septic air into the pleural cavity, increasing the existing pneumothorax. Although a foreign body in the bronchus can be reached by bronchotomy, the removal of the body is hazardous. A successful issue seems at present problematical. Should a foreign body in the bronchus fail to be expelled, its retention is attended with danger, though the obstruction be but partial. There is immediate or remote risk of inflammation. Low tracheotomy is then advisable; it adds little to the risks, and affords a ready means of escape, if extraction is not feasible. Subsequent dangers are dependent upon severe and prolonged instrumentation rather than upon the tracheotomy. Spontaneous expulsion is facilitated by tracheotomy. Tracheotomy is permissible even when a foreign body has long been imprisoned in a bronchus. The question of tracheotomy is largely dependent upon the form, size, and character of the foreign body. The term bronchotomy should be limited in application to an opening of the bronchus. The risks from thoracotomy and bronchotomy following unsuccessful tracheotomy are much greater than the dangers incurred by permitting the foreign body to remain.

In the discussion, DR. J. R. WEIST, of Richmond, said that from a study of one thousand cases in which foreign bodies were impacted in the bronchi, he had reached the conclusion that the chances of the patient were better if left alone than if an operation, such as bronchotomy, was performed.

DR. S. H. WEEKS, of Portland, thought that in these cases tracheotomy should be performed, as this affords a chance of reaching the foreign body, and also offers a chance for its spontaneous expulsion. It occasionally happens that the body is forced up against the vocal cords and then falls back, or else suffocates the patient before relief can be afforded. He reported the case of a child, ten years old, that had gotten into the trachea a screw-cap that was used to close a pocket-flask. The screw-cap had been in the trachea for several days before the patient came under observation. The trachea was opened, and the patient suspended, but the foreign body did not escape. The patient was then placed in the horizontal position, and an attempt made to remove the cap with forceps. It could be felt, but could not be grasped. After working unsuccessfully for some time, the patient was again suspended, and the attempt with the forceps renewed, and at once the body was grasped and removed. The patient made a perfect recovery.

DR. KINGSTON, of Montreal, reported a case in which he had removed an artificial incisor tooth, with its attachments, from the trachea, where it had remained for three months. The operation necessitated prolonged manipulation, but was followed by no bad results.

MR. HOWARD MARSH, of London, thought that on account of the danger of leaving the foreign body in the bronchus, the uncertainty as to the possibility of removal until the attempt is made, and the safety of tracheotomy, this operation should be performed. In all cases it gives the patient a chance, when otherwise he would perhaps have none.

MR. ARTHUR EDWARD DURHAM, of London, agreed that the operation through the chest-wall was a dangerous and doubtful procedure. The more he saw of these cases the more satisfied was he, as the result of considerable experience, that the proper thing to do when there is clear evidence that a foreign body is impacted in the bronchus, is to open the trachea low down, and endeavor to remove the foreign body, or to facilitate its spontaneous expulsion.

After extending a vote of thanks to the retiring President, the Association adjourned, to meet in Boston, Mass., in June, 1892.

AMERICAN GYNECOLOGICAL SOCIETY.

Sixteenth Annual Meeting, held at Washington, September 22, 23, and 24, 1891.

(Continued from p. 370)

SECOND DAY—SEPTEMBER 23D.

DR. A. REEVES JACKSON, of Chicago, delivered the President's Address. He revieved the work of the Society in the past, and referred with much feeling to the recent death of Dr. Fordyce Barker, one of its founders and its first presiding officer. He had occasion also to mourn the death of Dr. David Humphrey Storey, of Boston, an honorary member, and Dr. George H. Lyman, one of the founders.

Reviewing the field of gynecology during the fifteen years of the Society's organization, he pointed out how the advocates of certain operative procedures had become extremists. The total extirpation of the uterine appendages was a most striking instance of this tendency. He considered it a crime to remove the ovaries and tubes when simpler treatment could be adopted. He protested against the too frequent examinations of the pelvic organs of young girls and unmarried women, and condemned the practice of publishing hasty and immature reports of surgical work that had not undergone the test of time.

DR. WILLIAM H. BAKER, of Boston, read a paper on "Cancer of the Cervix Uteri: Result of its Treatment by High Amputation," in which he referred to the importance of tracing the future history of cases. The specialist sees comparatively few cases sufficiently early to accomplish much by a radical operation, because the early symptoms are not marked, and the hemorrhage and leucorrhea are supposed by the patient to be incident to the menopause, and because in many cases the physician fails to recognize the importance of the condition, or, recognizing it, lacks faith in its successful removal. Of ten cases reported in 1882 as having been operated on without a death, eight were then living and well. In 1886 six of these were then living and well, or about 60 per cent., after a period of from four to eight years. At the

present time 50 per cent. of the original cases are living and well, after a period of from ten to twelve years.

In a second series of cases operated on from 1882 to 1889 there was no recurrence of the disease in 62½ per cent. of the cases.

Dr. Baker emphasized the necessity of thoroughly cauterizing the raw surfaces after the removal of the growth by the knife. He claims for the high amputation, as compared with hysterectomy, greater safety to the life of the patient and longer respite from recurrence of the disease.

The following conclusions were formulated: All the disease should first be thoroughly removed with scissors or scalpel, keeping well outside the infiltration and apparently in healthy tissue; second, the wound should not be immediately closed, but every portion of it should be kept under observation until entirely healed; third, the thorough application of the cautery is an all-important factor in the success of the operation; fourth, it is often necessary to do some slight secondary operation to insure success; fifth, the cases must be under close observation for years.

In all cases of carcinoma of the cervix, when the uterus has not become fixed by an extension of the disease, high amputation, followed immediately by the application of the cautery, is the safest and best method of treatment. Vaginal hysterectomy should be reserved for cases of carcinoma primarily affecting the corpus uteri, or when the disease has extended to the corpus uteri without fixing the uterus.

Dr. John Byrne, of Brooklyn, believed that high amputation could be as completely performed with a delicate galvano-cautery knife as with the scalpel or scissors.

Dr. Thomas Addis Emmet believed in the high amputation, though in some cases of sarcoma it might be necessary to resort to total extirpation.

Dr. Henry J. Garrigues, of New York, read a paper on "The Best Posture in the Different Stages of Normal Labor." In deciding the posture to be occupied by a woman during labor one should take into consideration her comfort and safety, the child's safety, and the accoucheur's comfort, which again contributes to the mother's safety. While the child is passing through the bony part of the parturient canal, the semi-recumbent position on the back is best. The contraction of voluntary muscles and gravity coöperate with the contraction of the womb; the entrance of the head into the superior strait is favored; the stethoscope can easily be applied to the abdomen; manual pressure may be exercised on the womb. Sometimes a change of position is useful.

When the vulva begins to open, the patient should be turned on the left side and should lie horizontally, her thighs at a right angle with the trunk, and the legs and the lumbar region extended. All support should be taken from hands and feet, and chloroform should be given. In this position the os coccygis is free to recede backward, the genitals become visible and easily accessible, while the rest of the body remains covered, whereby exposure to cold is avoided; the patient does not see the accoucheur and has a feeling of being hidden. Abdominal pressure is limited; the fundus sinks down, so that gravitation works in a direction opposite to that of uterine contraction. The left lateral position affords a safeguard to the perineum and prevents the head from emerging too suddenly. During and after the expulsion of the placenta, the woman should be on her back, with the head low, a position well adapted to Credé's method. The kneeling, squatting posture is fatiguing, predisposes to fainting and hemorrhage, makes the use of the stethoscope difficult, nearly excludes any kind of protection of the perineum, and renders the use of chloroform impossible, though in cases of lingering labor it may be tried.

Dr. A. F. King, of Washington, thought that normal labors were the exception, rather than the rule, whence it was difficult to designate any definite posture as the best.

Dr. Sawyer, of Chicago, mentioned the case of a Piute Indian whom he had seen, whose child was born while she was standing erect.

Dr. W. Gill Wylie read a paper on "The Influence of Imperfect Development as a Cause of Uterine Disease." The most important influence at work in causing uterine disease is the tendency to restrict the physical development of our females just at the time when they are changing from girls to women. The generative organs are practically dormant until about the tenth year, when they begin to develop and make a large demand on the system up to about the sixteenth year. To insure full development during this period a girl must have a surplus of physical and nerve force. If, during this period of development, the girl is pushed at school or her force is used up by constant contact with older, intellectual persons, she is almost certain to have a leucorrheal discharge and dysmenorrhea, and an imperfectly developed uterus, with disease of the glands and follicles, which predisposes to catarrhal endometritis, the development of new-growths, such as carcinomata or fibromata; and if marriage and pregnancy follow, the labor is apt to result in laceration of the cervix, or the catarrhal condition is pretty certain to result in sterility. To prevent this condition of imperfect development the general health should be maintained, the bowels kept regular, and healthful play out-of-doors and pleasing mental occupation should take the place of an in-door life, forced cramming, and stimulating contact with older persons.

Dr. A. W. Johnstone, of Cincinnati, believed that if there were no infantile uteri there would be no lacerated cervices, and that quite a large percentage of cystic ovaries and diseased tubes were due to infantile uteri.

Dr. Henry T. Byford, of Chicago, presented a paper on "The Technique of Vaginal Fixation of the Stump in Abdominal Hysterectomy," in which he related his experience in twenty cases, with one death—a mortality of 5 per cent. The steps of the operation are as follows: 1, Ligating and suturing the broad ligaments; 2, separation of the bladder from the uterus; 3, placing the elastic ligature and pedicle pins; 4, ligating the stump and suturing the pared edges—all sutures and ligatures of the stump are to be left about four inches long; 5, removal of elastic ligature; 6, incision into the anterior fornix of the vagina; 7, turning the stump into the vagina; 8, suturing the bladder-peritoneum over the stump, so as to shut off the peritoneal cavity; 9, closure of the abdominal incision; 10, placing the clamp on the stump through the vulva, with the patient in the lithotomy

position; 11, checking oozing from the vaginal edges by means of dilute Monsel's solution and loose packing of the vagina with antiseptic gauze. Too much handling of the intestines is one of the chief dangers; in suturing the peritoneum over the stump, deep stitches are to be avoided, so as not to leave bleeding stitch-holes. Spurting vaginal arteries should be tied when severed.

Intra-peritoneal methods of treating the stump are inferior, because of the impossibility of rendering the stump harmless to the peritoneum, with the consequent unfavorable statistics. Total extirpation is too grave an undertaking, as statistics demonstrate. Ventral fixation is regarded as safe enough, but inferior to vaginal fixation, on account of the unnatural position of the cervix and the danger of hernia.

Vaginal fixation possesses most of the advantages of the other methods with few of the disadvantages. Its mortality is the lowest; its execution quite rapid; it need involve but little exposure of the intestines; it leaves the stump in a natural position, entirely outside of the peritoneal cavity; it leaves the smallest wound-surface in the peritoneal cavity; like total extirpation, it provides a safety-valve, in that there is an opening at the bottom of the peritoneal cavity, closed only by superficial catgut sutures; it preserves the portio vaginalis and the vagina unmutilated; bladder rents can be treated extraperitoneally, without displacement of the viscus; the necrotic stump is held off from the wounded tissues; perfect hemostasis is obtained.

Dr. Horace T. Hanks, of New York, read a paper entitled "Suggestions of Certain Rules to be Followed in the Effort to Prevent Mural Abscesses, Abdominal Sinuses, and Ventral Hernia after Laparotomy." Abscesses in the line of abdominal incisions after laparotomy tend to make tracks for later ventral herniæ. In trying to obviate the development of mural abscess incisions should be clean, the various layers being carefully separated; the lips of the wound should not be retracted with too much force or exposed to too long pressure; too hot water or too strong a germicide should not be applied to the lips of the incision; the abdomen should be rendered aseptic by means of a germicide dressing applied some hours before the operation. The operation should be aseptic. The dressing should be removed every second day. Before cutting the sutures the patient should wear a moist bichloride dressing for two or more hours; care should be taken that no sepsis is introduced into the wound when the sutures are withdrawn. No unnecessary punctures with needles should be made; the wound should not be strangulated by too tight tying of the deep sutures.

To avoid sinuses: a drainage-tube should never be used unless necessary; a tube should never be allowed to remain *in situ* more than twenty hours; the tube should be kept sweet and clean.

Ventral hernia can be prevented by a more careful apposition of the different layers of peritoneum, muscles, and fascia, care being taken not to strangulate the deeper tissues by suturing too tightly. Silkworm-gut sutures are to be recommended.

Dr. Emmet, of New York, believed that silver-wire suture should be used in preference to all others, because it enabled a more perfect coaptation of the edges of the wound. If the silk suture was used it was likely to have the effect of doubling the abdominal wall on itself, and producing a union between the peritoneum and the skin, which, he believed, in these cases was a frequent cause of hernia.

Dr. Byford, of Chicago, maintained that two important causes of abscess were sepsis and dead material in the wound. In an operation lasting half an hour there is apt to be a certain amount of laceration of the fatty tissue around the edges of the wound, and in order to get perfect union a certain amount of this wounded fat must be cut away, otherwise it will undergo necrosis. The worst abscesses that he had encountered were in cases in which he had used buried sutures. He preferred the silkworm-gut suture, introducing it with a curved needle, the suture describing a circle and preventing the peritoneum from pushing up into the wound.

Dr. W. Gill Wylie, of New York, stated that below the umbilicus the peritoneum is a loose tissue with little strength, that must be cleanly cut without being torn. The recti muscles are longitudinal muscles, and their transverse strength, excluding the facial covering, amounts to little. In opening the abdomen he would avoid that point and open in the linea alba. It was of vital importance to get perfect union of the deep fascia.

Dr. Thaddeus A. Reamy, of Cincinnati, read a paper entitled, "Some Clinical Testimony as to the Ultimate Results of Removal of the Uterine Appendages." The material on which the paper was based was restricted to cases in which there was a reliable history of the patient's condition for from two to five years after operation, excluding cases of ectopic gestation, tumors and malignant disease of the ovaries. The operations included 163 cases: In 144, both ovaries and tubes were removed; in 15, but one ovary was removed; in 7, such extensive adhesions and destruction of tissue by disease existed that the operation was discontinued after liberating, as far as possible, adhesions, the cases doing well; in 12, the appendages were removed for arrest of hemorrhage and growth of fibroid tumors (in none of these did the growth ascend above the umbilicus); in 6, for hystero-epilepsy (three of which were cured); in 3, for neurotic symptoms (1 cured, 1 improved, 1 made worse). Pyosalpinx was found in but 17 cases; parenchymatous salpingitis in 29; hydrosalpinx with disseminated cystic degeneration of both ovaries in 30 cases—of one ovary in only 26 cases.

Results: Forty cases were cured; 60 were improved in general condition; 30 were temporarily improved, but relapsed after a year or two; 10 were apparently worse after operation.

In every case in which both ovaries were thoroughly removed, menstruation ceased within six months, generally at once. In several cases uterine hemorrhage occurred subsequently, but not as menstruation. Reliable testimony from 44 married cases showed that in 14 the sexual appetite was extinguished with menstruation, in 7 it was lessened, in 16 it was not influenced, in 7 it was decidedly increased.

Conclusions: 1. Pyosalpinx does not exist in nearly so large a proportion of cases of pelvic disease in the middle and upper classes as is generally thought. 2. In cases of this class gonorrhea does not play nearly so important a rôle in the causation of disease of the tubes and ovaries as is generally believed. 3. In properly

selected cases, in which otherwise-incurable disease of the appendages exists, the results from surgical interference are not only satisfactory, but brilliant. 4. In properly selected cases the removal of the uterine appendages offers more promise for the relief of hystero-epilepsy than is generally conceded. 5. The practice should not be continued in the treatment of purely neurotic cases. 6. Many cases of manifest pelvic disease, including disease of the ovaries and tubes, which are cured by removal, could be as thoroughly and promptly and more satisfactorily cured by more conservative methods, without the sacrifice of these important organs. 7. Many cases reported by operators as cured are after a few years found to be no better off than before operation. 8. The arrest of menstruation after the removal of the ovaries in so large a number of cases tends to confirm the belief that the ovaries bear an important relation to this function. 9. The influence of the removal of the appendages upon the sexual appetite has heretofore not generally been properly stated. 10. The relation of this influence to menstruation and the psychoses that so often follow to mar the otherwise satisfactory results of this operative procedure must now be fully conceded.

Dr. Joseph Taber Johnson, of Washington, thought that the removal of the appendages for a small bleeding fibroid was most justifiable and saved the patient from the horrors of a subsequent hysterectomy. He agreed with Dr. Reamy that the neurotic cases were the most difficult to treat. It might be well to give such patients the chance of the benefit that might follow operation, but always with the full explanation that there was no certainty that it would succeed. He doubted the advisability of operating for dysmenorrhea, as there were many other methods of successfully treating this condition; he thought the operation should be restricted to cases in which there was positive disease of the tubes and ovaries determinable by palpation.

Dr. Gill Wylie, of New York, was surprised that Dr. Reamy had performed so many incomplete operations. In his experience of over four hundred operations for diseased tubes and ovaries he had never performed an incomplete operation, and without losing many patients. He had observed a return of menstruation in about 5 per cent. of cases, due in every case, he believed, to other conditions of the uterus not cured by the operation.

Dr. S. C. Gordon agreed with Dr. Reamy in regard to neurotic cases. He had observed that the symptoms increased at the period of menstruation; when everything else had been done without effect that could be done, he would operate. He was much opposed to the experimental method of treating these cases—curetting, tamponning, iodinizing, etc., for four or five years, in order to find out what the trouble was.

Dr. H. C. Coe, of New York, thought true menstruation after the removal of tubes and ovaries a very rare occurrence, but he was convinced that profuse uterine hemorrhages did sometimes continue for one, two or three years. He had operated three times on one woman to ascertain the cause of profuse hemorrhage, but could demonstrate nothing beyond the presence of firm adhesions. Several small nodules were removed from the stumps of the tubes, but no ovarian tissue was found. Persistent hemorrhage may be due to adhesions, or sometimes to cysts of the broad ligament, and in a large number of cases to hypertrophic endometritis, the uterus not undergoing ordinary atrophy.

Dr. Richard B. Maury, of Memphis, read a paper on "The Indications for Laparotomy in the Treatment of the Puerperal Fevers." He divided puerperal fevers into two great classes: 1. Those that are almost always recovered from. 2. Those that are almost certainly fatal. The first are frankly inflammatory, with a tendency to localization, retaining the characters of a simple inflammation. The others are strikingly infectious in character, reacting on the entire economy and accompanied by diverse manifestations in organs more or less remote from the starting-point of the infection.

The first class includes cases that begin as a metritis, with extension of inflammation to the appendages, and a resulting pelvic peritonitis. Some of these terminate by slow resolution; in others, suppuration ensues, pus breaks into the vagina or rectum, and recovery may soon follow; but often the patient dies, exhausted by hectic. It is in this class of cases that laparotomy gives the most hope of success. The second class includes cases of putrid infection from decomposition of placental remains, clots, etc.; also cases of purulent infection, accompanied by the same general and local phenomena as in the case of purulent surgical infection, with metastatic abscesses and emboli; lastly, pure septicemia, in which there is no proper localization. The indications for laparotomy in these cases are very doubtful. On the border-line between these two classes is puerperal metro-peritonitis. These border-line cases are most perplexing in deciding the question of operation, and it is in this class that the results of surgical treatment have been most discouraging.

Ancient disease of the uterine appendages is an important factor in childbed mortality, from peritonitis rekindled into activity by labor or the processes of involution. The symptoms present in such cases are essentially those of puerperal peritonitis, and it is clinically impossible to separate cases having such an origin from others in which there is a general septic infection incurred through wounds in the genital passages.

In the cases first described, the prognosis after operation will presumably be much more favorable than in cases of puerperal metro-peritonitis, provided operation can be performed early. Outside of these there is but little to hope from laparotomy, because the peritonitis is merely a local manifestation of a general systemic infection.

As it cannot be known in advance with which class one has to deal, it is justifiable to open the abdomen in every case of acute puerperal peritonitis, if it can be done early, and thus save some lives. Late operations are certain to be followed by the loss of the patient.

Dr. Skene agreed with Dr. Maury that laparotomy was undoubtedly the best treatment when there was localized pelvic inflammation and pus-accumulation, as the results have shown, but in general post-partum peritonitis he would expect the results of laparotomy to be unsatisfactory.

Dr. Gill Wylie, of New York, was convinced that cases of puerperal fever were simply septic, and, if treated in the beginning, were almost all curable by washing out the uterus and draining. He had cured

seven cases out of nine, seen early, in Bellevue, by this method. The great trouble was in getting permission to operate early; most of the cases are not seen by the laparotomist until they are hopeless.

DR. GARRIGUES, of New York, believed that over one-half of even bad cases of puerperal fever, if seen early, recover by medical treatment.

DR. ANDREW F. CURRIER, of New York, read a paper entitled "A Study Relative to the Functions of the Reproductive Apparatus in American Indian Women," which appears elsewhere in the current number of THE MEDICAL NEWS.

THIRD DAY—SEPTEMBER 24TH.

DR. J. C. REEVE, of Dayton, read a paper entitled, "The Treatment of Extra-uterine Pregnancy," by PROF. F. WINCKEL, of Munich, which recommended injection of morphine into the amniotic sac.

There is no question that the inflammation of the pelvic organs attending extra-uterine pregnancy may naturally enough continue after the death of the fetus, and may be the cause of many complaints, but that the presence of the dead fetus is the cause of these symptoms cannot be regarded as proved.

Dr. Winckel related a case of ten months' tubal pregnancy, in which laparotomy was performed, the child and placenta extracted, the tubal sac mopped out with iodoform gauze, and closed by sutures. The patient was perfectly well when discharged, and shortly afterward menstruation reappeared. In such a case laparotomy is the only rational treatment. The necessity of laparotomy in certain cases of extra-uterine pregnancy was demonstrated by Dr. Winckel twenty-seven years ago, when he performed his first laparotomy, but his experience has taught him that it is not necessary to operate in the first few months of extra-uterine pregnancy, but that it is easier and better to treat such cases by injection of morphine into the amniotic sac. The woman is not mutilated, both ovaries and tubes remain, and there is a possibility of the tube that was impregnated resuming its functions.

If, after the death of the fetus by morphine, the patient complains of great physical suffering, then laparotomy is still possible, while the operation then is less dangerous.

The injection of morphine into the amniotic sac can be made by any practising physician. The extirpation of the sac by laparotomy cannot be successfully performed except by a skilled operator.

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper on "The Immediate Closure of Laceration of the Cervix," in which he did not maintain that laceration of the cervix should always be closed immediately after labor, but that there are many instances in which such closure is not only proper but urgent. When the conditions are favorable, and the operation can be performed without too much handling of the congested and torn cervix, the sooner the cervix is closed the better—not only for the instant relief afforded, but also for the promise of more certain and complete union of the parts; the woman is also saved much mental and physical suffering. In some respects the primary operation for laceration of the cervix stands to the secondary operation as the primary operation for laceration of the perineum stands to the secondary operation. In both primary operations fresh parts are brought together, and healthy union is sure to take place. The knife is not used in either case, and shock and hemorrhage from that source are avoided.

It has been claimed that sutures introduced for the immediate closure of a laceration of the cervix cannot be depended upon, because as the congestion and tenderness of the cervix subside the sutures will become loose, and fail to keep the edges of the laceration in proper coaptation. In answer to this it may be said that it is not at all uncommon for sutures to pull out when the secondary operation for laceration of the cervix is performed. The objection to the secondary operation is that the presence of cicatricial tissue renders the parts more difficult of coaptation and the process of union slower. The congestion and tender condition of the cervix does not forbid the introduction of sutures into it. In the Cæsarean section, which is now performed with signal success compared with what it was twenty-five years ago, sutures are introduced into the uterus when it is in the highest state of congestion, and when its vascularity is very great, and the tendency of the sutures to pull out is not reckoned among the most potent causes of the failure of the operation.

DR. CHARLES JEWETT remarked that he had performed primary closure of the cervix in a few instances, with entire satisfaction. It is a proper procedure when the cervix is torn to any extent, and imperative when the cervix is deeply torn. The operation may be objectionable in ordinary hands, but presents no difficulties for the expert. There was danger of infecting the patient; much manipulation of the birth-canal after labor should be avoided. If the birth-canal were thoroughly aseptic many of the minor lacerations would heal spontaneously.

DR. EMMET, of New York, would not undertake to immediately repair a lacerated perineum unless there was hemorrhage. If, by keeping the cervix clean, the patient is protected against blood-poisoning, local peritonitis, or cellulitis, a laceration will repair itself. If it be deep or extensive, he would repair it, if possible.

DR. COE, of New York, regarded the measure as a purely hemostatic one. He regarded a laceration of the cervix as a contused wound, which should be allowed to heal by granulation.

DR. A. P. DUDLEY, of New York, was in favor of the primary operation, because it secured immediate union and obviated the necessity of cutting away any portion of the uterus to get union by the secondary operation, thus also avoiding the deformity resulting from the use of the knife.

DR. KOLLOCK, in closing the discussion, remarked that, without regard to the occurrence of hemorrhage, if the laceration was extensive, he would advocate its immediate closure.

DR. EUGENE GEHRUNG, of St. Louis, read a paper entitled, "The Preventive and Conservative Treatment of Pelvic Tumors," in which he maintained that when in case of a pelvic tumor, other than surgical means of treatment are applicable, though the result be less brilliant, the simpler means should have the preference. In conformity with a universal law, the greater the resistance to the growth of a pelvic tumor the more rapid and destructive is that growth; in the absence of

resistance, growth may cease and retrograde changes follow. Many small myomata that may have existed in the pelvis for years, suddenly display great activity of growth when compressed and irritated; the circulation being interfered with, congestion follows and growth is rapid. Many sub-peritoneal tumors commence to grow rapidly only after they begin to sink into the small pelvis, where the resistance is greatest. The ovary is subject to the same law, the commencement of its abnormal growth frequently dating from its displacement or strangulation by adhesions. If displaced, it is compressed by surrounding organs, and pathological processes follow, with the development of cysts.

The same is true of the uterus, which becomes enlarged if by displacement its venous circulation is interfered with, or atrophied if its arterial circulation is impeded. It may be stated as a general rule that an incarcerated myoma or other tumor, a displaced ovary, or a strangulated womb, will, upon being released from its precarious position, cease to grow, and if kept free from pressure will in time return to its normal size.

As preventive measures and as a means of obtaining these results, Dr. Gehrung recommended: 1. A clear and early diagnosis of the tumor. 2. The hands of the operator, by means of which possible adhesions may be broken up and the tumor lifted out of the bony pelvis. 3. The almost lost art of the scientific use of the pessary —the tumor or organ, being freed from its imprisonment, should be supported in the correct position by a pessary. Tampons of cotton or other material may be used as a temporary means, but, as a rule, they are inefficient.

Dr. Edward Reynolds, of Boston, read a paper on "The Anatomical Relations of the Lacerated Perineum to the Mechanics of its Causation," detailing observations made during the last five years upon the shape and position of rents in different cases, with a classification of all perineal and vaginal tears as modifications of one type which is substantially that described by Dr. Emmet, in 1883, consisting of two lateral longitudinal tears of the vagina, joined at their lower extremities by a transverse tear and connected with the external surface by a median tear of the tissues below the crescent. This tear, but slightly modified, is stated to be the most common form. The next in frequency is one of the lateral tears, half the crescent, and the external tear. The crescent alone is not infrequent. One lateral tear sometimes extends down through the skin by the side of the anus, without passing toward the median line. All lesser variations could be arranged under these four varieties. The determination of the rent depends upon the anatomy of the pelvis. The tissues of the pelvic floor may be divided into layers, of which the superior consists of the recto-vesical and obturator-vesical fascia, with the coccygeal muscles, reinforced anteriorly by the triangular ligament; while the inferior layer consists of the two layers of the superficial fascia, compressor urethræ, superficial, transverse, and sphincter ani muscles.

The essential element in the repair of all lacerations must consist in the introduction of such sutures as will draw the torn edge of the upper layer of muscles downward, and that of the lower layer upward until both meet at the central point where they were originally separated.

Dr. George Keith, of Brooklyn, read a paper on "The Electrical Treatment of Uterine Fibroids in England," in which he stated that a careful study of the work of surgeons in Great Britain for some years past and a comparison of the results obtained by the electrical treatment for the cure of uterine fibroids with those obtained by hysterectomy and removal of the ovaries, confirmed his belief in favor of the electrical treatment. The treatment of fibroids of the uterus should not be restricted to any one method. It is held by some that electricity will cure the vast majority of cases, and obviate the necessity of hysterectomy in many. Hysterectomy is no doubt often performed for the removal of a tumor giving little trouble, which could have been cured by electricity.

Hysterectomy has in its favor, when the patient does not die after the operation, that the tumor is done with for all time and the convalescence is rapid. The disadvantages are: the mortality; the melancholic condition into which patients frequently fall; the fact that the life of the ordinary fibroid is limited.

Electricity is in its infancy. When it is as old as hysterectomy the death-rate will have been much diminished. There are some cases in which operation is to be recommended. This must be insisted upon, for the opponents of electricity are apt to say that its advocates decline operative procedures on all occasions. Hysterectomy is advisable in large fibro-cystic tumors, and also perhaps in those surrounded by free fluid; also for removal of the appendages when the tubes and ovaries are seriously diseased, especially if there be any suppuration.

Dr. W. E. Ford stated that he had investigated a number of the cases treated by him in the past seven years, and found that a large number of the small fibroids were cured, and the very large intra-mural growths lessened in size. In dangerous cases of large fibroids, galvanism promises more than hysterectomy. These large fibroids are adherent and make dangerous cases for operation, but they are safe for electricity, provided there is no history of pus-accumulation in the pelvis. The element of cure in the galvanic current is its ampèrage and not its voltage—the volume and not the tension produces the electrolysis.

Dr. Sutton was strongly opposed to electricity in these cases, and believed that hysterectomy was the only rational procedure.

Dr. W. H. Baker, of Boston, said that electricity for the treatment of fibroids had been a success in his hands, and he was satisfied with the results in nineteen cases out of twenty.

Dr. Clement Cleveland, of New York, read a short paper, entitled "Laparotomy in Trendelenburg's Posture, with Exhibition of a New Operating-table." In the posture recommended by Trendelenburg the body is so placed that the intestines will fall toward the diaphragm and at the same time leave the abdominal muscles relaxed. The body, with the head, is inclined downward, the weight of the body resting on the shoulders, the thighs and knees flexed on the body, so as to secure relaxation of the abdominal muscles. A saving in time of at least fifty per cent. is gained by the use of this posture in preference to the ordinary laparotomy position.

The table exhibited was available for the Trendelenburg posture, or for general gynecological work. When used for the latter purpose, it was brought to a horizontal position and firmly clamped, and would sustain a weight of 200 pounds.

DR. HENRY D. FRY, of Washington, read a paper on "Diabetes Mellitus Gravidarum," which will shortly appear in THE MEDICAL NEWS.

The following officers were elected for the ensuing year:

President.—Dr. John Byrne, of Brooklyn.

Vice-Presidents.—Dr. R. B. Maury, of Memphis, and Dr. Cornelius Kollock, of Cheraw, S. C.

Secretary.—Dr. Henry C. Coe, of New York.

Treasurer.—Dr. Matthew D. Mann, of Buffalo.

Council.—Dr. J. W. Chadwick, of Boston; Dr. H. T. Hanks, of New York; Dr. S. C. Gordon, of Portland, Me.; Dr. J. E. Janvrin, of New York.

The following new Fellows were elected:

Dr. Geo. M. Tuttle, of New York; Dr. William E. Mosely, of Baltimore; Dr. Florian Krug, of New York; Dr. Geo. Edebohls, of New York; Dr. Chas. P. Noble, of Philadelphia; Dr. Edward P. Davis, of Philadelphia; Dr. Virgil Hardon, of Atlanta; Dr. Charles Strong, of Boston; Dr. B. C. Hirst, of Philadelphia; Dr. A. McLaren, of St. Paul; Dr. F. H. Martin, of Chicago; Dr. P. H. Ingalls, of Hartford. Honorary Members: Dr. Samuel Pozzi, of Paris; Professor Olhausen, of Berlin; Professor Leopold, of Dresden.

The meeting then adjourned, to meet in Brooklyn on the third Tuesday in September, 1892.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Eighth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

FIRST DAY—SEPTEMBER 22D.

DR. FREDERICK I. KNIGHT, of Boston, delivered the President's Address. He emphasized the importance of retaining the one hundred millions of dollars annually spent by Americans at European health-resorts, by a more intelligent exposition of the equal value of American mineral waters and climatic conditions. He recommended annual meetings of the Climatological Association to be held at health-resorts, with the double object of acquiring personal familiarity with the value and character of our own resources, and for the stimulation of those concerned in efforts in the line of improvement. Resorts for tuberculous patients should be tabulated, and rooms should not be indiscriminately occupied by the sick and the well. After having been occupied by tuberculous patients, rooms should be disinfected under medical supervision.

DR. BEVERLEY ROBINSON, of New York, read "Notes on General *versus* Local Treatment of Catarrhal Inflammations of the Upper Air-tract." Nasal obstructions *per se* do not require treatment, but if a source of disease, the lining membrane should be removed. In cases of traumatism sprays should be used. The nasal douche is a two-edged sword. Vaselin, cosmolin and albolin are beneficial. A torpid liver bears some relation to nasal catarrh. Chronic gastric catarrh is also related to some cases of hypertrophy of the nasal mucous membrane. Treatment with the cautery, properly applied, is innocuous. When a deviated septum is productive of disease, it should be operated upon. Nasal obstruction is not so frequent a cause of disease of the tonsils, eyes, and ears as is generally supposed. Rheumatism and gout are often associated with disease of the upper air-tract. The cough of so-called hysteria, anemia, etc., is often due to enlargement of the lingual tonsil, giving rise to irritation of the epiglottis. Lithemic conditions may act as a cause of enlarged lingual tonsils. The globus hystericus is often due to an enlarged lingual tonsil.

DR. E. O. OTIS, of Boston, read a paper on "Gymnastic Exercise as a Prophylactic and Remedy in Chest Diseases." He stated that from his experience as the medical director of a city gymnasium, making many physical examinations of men and boys, and prescribing systematic gymnastic exercises for them, he is convinced that gymnastic exercise, scientifically carried out, constitutes a prophylactic agent of great value in diseases of the chest, and a valuable aid in the maintenance of sound and vigorous hearts and lungs in the trying conditions of in-door city life. He also believes that gymnastic exercise can be extended to actual diseases of the chest, and is a therapeutic measure of no mean value. Two conditions frequently encountered suggest future disease, particularly in men between the ages of thirty and fifty: First, a certain lack of vigor and firmness in the action of the heart—"sedentary" heart—often accompanied with overweight and shortness of breath; second, poor and incomplete expansion of the lungs, with diaphragmatic breathing and disuse of the intercostals.

A patient belonging to the "sedentary" heart class is put upon light, slow work at first, rapid walking or slow running, chest-weights, gentle rowing and free-hand exercise, etc. If a case of poor lung-expansion, he is put upon lung-expanding apparatus of various kinds, rowing, free-hand work, or class work, with wooden dumbbells, etc. Swimming is one of the best forms of exercise for expanding the lungs. Over-development of the chest muscles is often detrimental to good lung expansion. The gymnastic remedy described for vicious habits in non-diseased lungs may, under careful supervision, be applicable to actually-diseased conditions in their inception. To promote proper and greater chest-expansion and more complete extension of the lungs is on the lines of the high-altitude climatic cure, which excites more rapid and fuller respirations. Many patients do not know how to breathe properly, and often the intercostals are so weak they cannot do their share of the work. Proper gymnastic exercise carefully watched is of much avail in training the patient how to breathe properly. Consumptives are sometimes advised, or on their own responsibility attempt physical exercise in an irregular way, using chest-weights at home, and the like. This is of questionable utility, if not absolutely injurious. The exercise must be carefully adapted to the special case and constantly supervised.

The cardiac diseases most appropriate for the exercise-treatment are fatty heart and well-compensated cardiac disease. The objection to mountain climbing is its difficulty of regulation. The therapeutic efficacy of moderate and carefully-regulated and supervised gymnastic exercise is generally admitted.

DR. VAN BIBBER, of Baltimore, read a paper on "The

Climate of the Greater Piedmont and the Mountainous Region of the South."

SECOND DAY—SEPTEMBER 23D.

DR. E. L. SHURLY, of Detroit, read an exhaustive paper upon "A Study of the Sputum in Pulmonary Consumption," in which he dwelt largely upon the results obtained by injecting into mice solutions of phthisical sputum containing various chemical agents.

In a paper entitled "The Surgical Treatment of Acute and Chronic Empyema," based upon an experience of considerable magnitude, DR. MAURICE H. RICHARDSON, of Boston, expressed the view that all methods of treatment of empyema other than the surgical were objectionable and unscientific. He considers immediate drainage imperative. Thorough asepsis must be enforced for at least twenty-four hours before the operation, the patient's body and surroundings being placed in the most aseptic condition possible. The incision should be made directly over a rib, preferably the seventh or eighth, and should be from two to three inches long. The rib being exposed, one or more inches should be excised. A drainage-tube not less than three-eighths of an inch in diameter should be placed alongside of another of the same size, and the two introduced into the wound. For the sake of cleanliness, several sets of these tubes should be prepared. If the opening in the chest-wall is sufficiently large, Dr. Richardson regards washing out of the cavity as of doubtful efficacy. If any solution is used for this purpose, it should be the sodium chlorate, 1 : 10, which is of special service when an offensive odor emanates from the purulent collection. Carbolic acid solutions are dangerous. The family history is the most important element in the prognosis of acute empyema treated surgically. If phthisis is hereditary the lung will probably not readily expand.

DR. F. H. BOSWORTH, of New York, read a paper on the subject of "Lymphatism," a name that he would restrict to that constitutional condition under the influence of which the lymphatic glands in the neighborhood of the faucial ring become the seat of hypertrophic changes, excluding from the definition those graver change in the lymphatic glands that constitute Hodgkin's disease and like affections, as well as those extensive lymphatic enlargements in the neck that tend to undergo suppurative changes. Manifestations of lymphatism are enlarged faucial tonsils, adenoid disease in the vault of the pharynx, and hypertrophy of the lingual tonsil.

Dr. Bosworth emphasized the fact that the existence of the enlarged lymphatics in these various regions should be accepted as evidence of a constitutional taint, rather than as constituting simple obstructing hypertrophies in the throat. He furthermore insisted that, especially in the earlier years of life, before these masses have become fully and firmly organized, they were amenable to internal treatment, preference being given to the iodide of iron. He argued that this drug was almost a specific in controlling these growths, but that the mistake usually made was in giving it in too small doses. For a child five years old the dose should be at least two and a half grains given three times daily, or half a teaspoonful of the officinal syrup. Its effects should be watched carefully, and the dose increased to five grains, or even more. This not only reduces the lymphatic hypertrophies, but also corrects the anemia that so commonly attends the disease.

After the affection has lasted a few years, of course, the hypertrophies become so thoroughly organized that no internal medication serves to reduce them. In these cases, the masses should be treated in precisely the same manner as other tumors, and subjected to surgical measures; but even in the older cases the constitutional treatment of the lymphatism, which causes the local disease, should not be neglected.

DR. JACOBI, of New York, stated that he does not regard lymphatism as a disease *per se*, but as the result of some local irritation of the head, ear or mouth. Eczema, common nasal catarrh or post-nasal catarrh, untreated, will give rise to a chronic adenitis involving the glands of the neck and extending to the mediastinal and axillary glands. He urges the importance of prophylaxis in the treatment of the condition.

"The Histological Changes that Take Place in the Lungs in Cured Phthisis, and the Influence of Diathesis in the Development of Such Changes" was the title of the paper read by DR. ALFRED L. LOOMIS, of New York. He dwelt upon the development of fibrous tissue in all cases of phthisis that terminate in recovery. In some of the cases a pleuritic fibrosis seems to be the first change. A condition of intense hyperemia is always present in phthisis, and this tends to the formation of fibrous tissue. The antagonistic action of the diathesis is revealed in many of these cases of cured phthisis. Individuals with the fibroid diathesis enjoy a relative immunity from phthisis, and, when the disease does develop, resist its action in a remarkable degree. Dr. Loomis quoted ten cases illustrative of the inhibitory influence of the gouty diathesis upon the progress of phthisis. If Koch's tuberculin be of any value in the treatment of phthisis he believes that it is because it excites around the diseased foci an inflammation that tends to the production of fibrous tissue.

DR. JACOBI stated that he regards phosphorus and arsenic as the two principal remedies that favor the production of fibrous tissue. He has used phosphorus for twenty years in chronic osteitis and incipient Pott's disease of traumatic origin for the purpose of producing a new formation of fibrous tissue in bone. He also uses arsenic in lung troubles for the same purpose.

DR. CURTIN, of Philadelphia, ascribes the curative results of the injection of iodine into tuberculous cavities to the inflammatory new-formation of fibrous tissue that follows.

DR. BEVERLEY ROBINSON, of New York, expressed the view that injections of iodine into the inflamed tissue around the cavity would be more beneficial than injections into the cavity itself.

DR. S. A. FISK, of Denver, read a paper on "Some Further Considerations of the Analysis of Recorded Cases of Phthisis Pulmonalis." He claims that improvement may be expected in two out of three cases; that men do better than women; that those over twenty have a better chance than those under twenty years of age; that heredity should be no drawback to living in Colorado, and that the hemorrhagic tendency should not debar the patient from coming. The ratio of cures is 32 per cent.

DR. H. F. WILLIAMS, of Brooklyn, in "Some Reflections on the Attempts that have been Made to Discover Specifics for Phthisis," called attention to the good results that have attended the employment of the pneumatic cabinet devised by him.

DR. FRANK FREMONT SMITH, of St. Augustine, in speaking of "The Value of Koch's Remedy Employed as an Alterative: Reactive Fever Prevented," claimed that the dose of tuberculin can only be determined by the effect upon the patient. He believes that all stages of phthisis can be treated without reactive fever and without danger by regulating the dose employed. Weak men and nearly all women improve very slowly under its use.

THIRD DAY—SEPTEMBER 24TH.

A paper on "The Epidemiology of La Grippe and Its Relations to Catarrhal Fever," by DR. ROLAND G. CURTIN and DR. E. W. WATSON, of Philadelphia, was read. It was related that catarrh of the bladder and kidneys was characteristic of the disease. The same organ or tissue is never affected in a second attack. This was especially true of the lung. The rapid dissemination of influenza was ascribed to the universal prevalence of a warm and moist atmosphere. Its progress in some respects simulated that of cholera and of dengue. From the history of previous epidemics, it was thought probable that the coming winter would witness an outbreak of the disease, with new manifestations involving the throat, and resembling diphtheria. Dr. Curtin occasionally observed an eruption, occurring in crops upon the abdomen and resembling the rose-spots of typhoid fever. Meningeal involvement and heart-failure were the most frequent causes of death.

DR. JOHN C. MONRO, of Boston, placed the average period of incubation at four days, and the duration of the acute symptoms at from three to six days. Complete recovery did not follow for months. The disease was most prevalent between the ages of fifteen and fifty. In the working-classes, men were most often affected and the disease was most serious among them, while among the better classes women were the most frequent sufferers. Headache was the most common symptom. During the prevalence of the epidemic lung troubles were greatly increased, and the mortality was large.

DR. A. A. SMITH, of New York, stated that in a large number of cases he had observed an eruption closely resembling that of scarlet fever, which disappeared in two or three days without desquamation. This occurred in adults with but one exception, and that in a half-grown child. Urticaria was frequently observed, especially in cases in which the gastric system was disturbed. In two instances the eruption resembled that of measles. Purpura was present in many cases, occurring late in the attack or during convalescence. Petechiæ appeared on the extremities, and in a few instances remained for a few weeks, disappearing slowly. In many cases there was great mental depression; acute mania was present in a few. A suicidal tendency was frequently observed; a homicidal tendency rarely. Seven cases of marked jaundice were observed.

DR. CURTIN expressed his belief in the contagiousness of the disease. The crowding of the sick in small compartments intensified the attack. Croupous pneumonia was rare, but the catarrhal form occurred frequently among the working-people. Pericardial distress was noted in many cases, but inflammation of the heart was rare. The heart's action was commonly irregular, slow and feeble. In the early stages of the epidemic, heart-failure caused the largest number of deaths. Hemorrhages were not infrequent and, as a rule, occurred early. Dermatitis was very common, five cases coming under observation in one day.

DR. R. J. NUNN, of Savannah, stated that he treated the disease as a neurosis, involving the central nervous system. His treatment was stimulating; ammonia, nux vomica, and hydrastis were found to be of most service. Opium appeared to act badly in all cases; in many instances change of climate was essential.

DR. E. FLETCHER INGALS, of Chicago, observed that children were much less frequently attacked than were adults. Inflammation of the cornea was frequently noticed. It occurred in two types; in the first, zigzag lines of ulceration were present upon the cornea, while in the other the surface remained bright and unbroken. Inflammation of the middle ear, slight or severe, occasionally occurred. A tendency to the development of inflammation of the pleura was marked in the last epidemic, while cerebro-spinal meningitis was common in 1890. Tracheitis was a frequent complication; pleuro-pneumonia was exceedingly common and disastrous in its results.

DR. J. C. MULHALL, of St. Louis, noticed that the disease showed no regard for social position, and that the weak and strong were alike attacked. Pulmonary phthisis was the most common sequel. He believes that the *materies morbi* of la grippe often awakens dormant or healing pathological processes. One peculiar manifestation was a loss of the whole or part of the upper register in soprano voices. One attack of the disease did not protect from subsequent attacks. Vaso-motor paralysis was frequent. In all of the cases phenic acid acted well.

DR. LEVICK, of Philadelphia, drew a comparison between the epidemic of 1861 and the recent epidemic. He has long believed that a close relationship exists between epidemic catarrhal fever and epidemic cerebro-spinal meningitis. He believes that should the coming winter be cold, we shall have an epidemic of cerebro-spinal fever.

DR. J. H. MUSSER, of Philadelphia, agreed with Dr. Curtin as to the contagiousness of the disease. He recommends prompt measures of prevention.

DR. S. A. FISK, of Denver, observed that the influence of the disease upon the nervous system was decided. Consumptives appeared to be entirely exempt from the disease.

DR. A. H. SMITH has used largely phenacetin in the treatment of the disease, combined with camphor and atropine, to prevent the profuse perspiration. He believes the disease to be zymotic in orgin.

DR. CURTIN called attention to the frequency with which angina pectoris followed attacks of la grippe. During the past two years he has seen more cases of angina pectoris than ever before. He also advocated the use of oil of sandalwood, taken upon a lump of

sugar, for the allevitaion of the cough, provided the stomach would bear the administration of that remedy.

Fourth Day—September 25th.

Dr. W. A. Jayne, of Georgetown, Colorado, read a paper entitled "An Experience with Diphtheria at a High Altitude." He reviewed sixty-eight cases of diphtheria observed in the Rocky Mountains, at an elevation of 8500 feet above sea-level. The outbreak was attributed to unsanitary local conditions. The death-rate approached that of the milder rather than of the more severe epidemics. The fatal cases were mostly those in which extension to the nasal cavities occurred, the fatal issue being dependent upon septic influences. Such extension occurred in nearly one-half of the cases, commencing in the pharynx; it could not be ascribed to antecedent catarrh, but rather to those general causes that determine varying degrees of virulence. Grave forms are encountered when the environment is particularly bad. In the cases in which recovery took place there was a remarkable absence of all sequelæ, and convalescence was prompt and satisfactory. The type and severity of diphtheria varies greatly even under apparently similar conditions, from causes as yet not understood. Climate has little to do with these variations, but the degree of dampness of air and soil probably has some influence. Humidity is essential to germ-life, dryness inimical to it. The climate of dry, high altitudes has a restraining influence on the development of the tubercle bacillus and of pyogenic bacteria, probably also upon the diphtheria bacillus.

It has been asserted that the virulence of diphtheria is increased by the atmospheric rarity and the low temperature of high altitudes. No basis for such an assumption can be found in theory or in comparative observations at the bedside. Given similar local conditions, diphtheria will probably be found more quickly to develop and assume greater virulence in the more humid atmosphere of a low elevation than in the drier air common to most high altitudes, and that the degree of elevation *per se* is not a determining factor.

Dr. Rogers, of Denver, noticed that in the majority of severe cases the nose was invariably involved; he therefore advised early treatment of the nares. Moisture favors the spread of the disease, and is most common in Colorado as the snow melts after a storm. In the treatment of the disease he recommends the free use of mercurials. He prefers a solution of the bichloride, one grain to the ounce, together with a strong solution of the tincture of iodine and hydrogen dioxide. To a child of five he gives gr. $\frac{1}{48}$ of the bichloride every two hours. To older children he has given gr. $\frac{1}{12}$ every two hours for forty-eight hours. The only limit to the dose is the effect upon the membrane. He always uses iron in combination with mercury. Since using the large doses of mercury he sees fewer deaths from nephritis.

Dr. W. C. Glasgow, of St. Louis, has lost twelve cases of diphtheria during the year, and he ascribes the result to the use of mercury. He has used hydrogen dioxide extensively and considers it of great value, especially when membranes form in the larynx.

Dr. C. C. Ransom, of Richfield Springs, N. Y., read an interesting paper upon "The Waters of Richfield Springs," in which he gave a description of the springs, with the methods of using the waters. The bathing establishment is elaborately equipped with accommodations for Russian and Turkish baths and facilities for medicated baths. There are inhalation-rooms in which the sulphurous water is atomized and applied directly to the affected part, while gymnasia, completely equipped with apparatus for men and women, provide excellent opportunities for muscular development. The waters are rich in sulphuretted hydrogen, and to this is due their efficacy. The water is drunk before dinner, and the patient should walk at least for a half-hour after drinking, in order to favor its absorption. The immersion-bath or tub-bath is the favorite method of external application. The duration of the bath is from six to twelve minutes; the immediate effect is depressing, the depression lasting from half an hour to three hours. In conjunction with the bath, massage is employed with good results in the treatment of insomnia. The spinal douche is applied just before retiring. No treatment for rheumatism and gout gives such good results as the use of the waters of Richfield. Sciatica is improved. Two cases of catarrhal jaundice were cured by a strong douche directed upon the hepatic region. The strictest care is required in the treatment of the general condition of all the patients, who are put upon an almost absolute meat diet, to the exclusion of fresh fruits, starches, and sweets.

Dr. Carl Kuedi, of Denver, called attention to the difference between the methods of dieting at Richfield and in Europe. At the Continental resorts a liberal meat diet is forbidden.

Dr. Geddings, of Aiken, S. C., read a paper upon "The Simultaneous Occurrence of Three Cases of Lepra in One Family, Following Immersion in Filthy Salt-water, in a Flooded Cellar." The disease commenced as bullæ upon the left leg, which gradually developed into white cicatrices with marked anesthesia. The etiology was uncertain.

Dr. W. W. Johnston, of Washington, read an abstract of his paper upon "The Effects of Climate in the Treatment of Chronic Diarrhea," in which he divides all cases of diarrhea into two classes: the primary form embraces cases with or without ulceration, the type of which is the chronic diarrhea of the army; the second is that occasioned by overwork in men and frequent child-bearing in women. Prolonged rest in a suitable climate is essential to successful treatment. A warm, equable climate is not as useful as a dry, cooler climate.

Dr. J. H. Tyndale, of New York, read a paper upon "The Pre-tuberculous Condition," which will appear in full in a subsequent number of The Medical News.

Dr. Carl Kuedi, of Denver, read a paper upon "The Treatment of Sixty Cases with Tuberculin at Davos." He has observed that females require larger doses of tuberculin than males to produce the same effect. He regards the local reaction as the most common and most important of the effects of tuberculin.

Dr. Karl von Ruck, of Asheville, claims that he preceded Dr. Smith, of St. Augustine, by five weeks in the administration of tuberculin without reactive fever. He believes tuberculin has a great future before it.

The Association adjourned, to convene next year at Richfield Springs, New York.

ASSOCIATION OF AMERICAN PHYSICIANS.

Sixth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from page 375.)

FOURTH DAY—SEPTEMBER 25TH.

DR. JOHN S. BILLINGS, Surgeon in the United States Army, of Washington, read a paper on "The Condition and Prospects of the Library of the Surgeon-General's Office and its Index-Catalogue," which appeared in full in THE MEDICAL NEWS of September 26th.

DR. D. W. PRENTISS, of Washington, then read a paper, entitled, "Sequel to a Case of Slow Pulse (Purdy)." The case reported had already twice been presented to the Society. The slow pulse had continued for more than two years, varying from 11 to 40 per minute. During a short period of this time the frequency was normal, but it soon again fell within the limits mentioned. The man was a subject of frequent attacks of syncope, which were most frequent when the pulse was slowest. No disease of the heart or other organs could be detected. Flint has called this condition "functional slow pulse."

In looking over medical literature, Dr. Prentiss has found records of ninety-three cases almost identical with that which he has reported.

Continuing, Dr. Prentiss reported that from May 24th until the time of death the attacks of dizziness and fainting increased in frequency, the pulse ranging between 13 and 34 per minute. On July 2d the pulse was 15; the patient was restless and delirious, and in constant fear of being killed. July 4th the delirium became worse; the man was so impressed with the idea that he was about to be killed that he rushed through the house screaming and crying. He was, however, induced to lie down, when he became quiet, and died soon after while alone in his room.

The report of the autopsy was made by DR. ROBERT T. EDES, of Washington.

The post-mortem examination was made seventeen hours after death; the expression was tranquil; the body well nourished; the blood everywhere dark and fluid. The heart was large and firm; its muscular substance firm, not fatty; the walls of both ventricles thickened, perhaps the right more than the left. The lungs were well dilated. There was no atheroma. The stomach was normal; the spleen normal; the kidneys congested. The brain, as well as the larger sympathetic ganglia, was normal; the medulla was congested. The right pneumogastric nerve seemed normal. At the point where the left curves beneath the arch of the aorta some of the strands seemed indistinct, and several fusiform enlargements were noted on these strands. At this point the nerve gives off several branches—one to form the esophageal plexus, others on the loop of the recurrent laryngeal just below the artery. At this point the recurrent laryngeal gave off branches to the cardiac plexus.

DR. PRENTISS then briefly reported two interesting cases from his own practice. The first was in a lady, twenty-five years of age, with light hair, suffering from contracted kidneys. She was given pilocarpine, gr. $\frac{1}{6}$, hypodermatically, two or three times weekly, for its diaphoretic effect. After two weeks it was noted that her hair had become chestnut-brown, and at the end of six weeks it was black. This occurred ten years ago, and the hair still remains black.

The second case was that of an old lady with gray hair, whose skin was so dry as to cause annoyance. For the relief of this condition the fluid extract of jaborandi was continuously given. At the expiration of six months her white eyebrows had become black; later, areas of the hair of the head began to turn black, and a growth of new black hair appeared. The woman soon after this rather suddenly died.

The President, DR. PEPPER, suggested the advisability of making some provision for the admission into the Society of men of high scientific rank in the departments of hygiene and bacteriology. He thought it better to have such men admitted to this Society than to have them form an independent society, as would inevitably happen, if they were not admitted. The membership of the Society is limited to one hundred, and there are at present but three vacancies, with many applicants waiting for admission.

A motion of DR. BUSEY, seconded by DR. BILLINGS, was carried to refer the matter to the Council to report an amendment.

DR. THEOBALD SMITH, of Washington, read a paper on the "Changes in the Red Blood-corpuscles in the Pernicious Anemia of Texas Cattle-fever," in which he said that in cover-glass preparations of blood from cases of progressive anemia in Texas cattle-fever, stained in alkaline methylene-blue and decolorized in acetic acid, certain peculiar conditions of the corpuscles may be noted. When the number has fallen slightly below three million, a small percentage appear with a variable number of stained particles disseminated uniformly through the corpuscle. In some cells these particles are relatively large, and might be mistaken for micrococci, if it were not for a certain variability in size. Each corpuscle may contain from three to twenty, or more, of these bodies. As the number of cells continues to fall, corpuscles appear that are beset with an increasing number of stained particles, diminishing in size until forms appear the discs of which seem covered with a precipitate of exceedingly minute stained points. Not all the particles with recognizable form are round—coccus-like, but some are angular and some appear like short rods. As a rule, the smallest particles are associated with the more advanced stages of anemia, although cells with granules of various sizes are found together. When the number of corpuscles has descended to between one and one-half and two millions, many of the large corpuscles are stained uniformly of a pronounced bluish-red. Such corpuscles are usually somewhat folded, owing to their thinness. The edges are not sharply defined, and within the disc is usually a paler circular or elongated spot. The stain is not resolved into points by high powers (+1500). Curiously enough, corpuscles containing stained granules have not been detected in preparations from the parenchyma of spleen, liver and kidneys, but are evidently confined to the circulating blood. Diffusely-stained cells are not so restricted, but may be observed in the organs as well. In the blood containing from one to two million corpuscles, nucleated red corpuscles or hematoblasts are present.

They increase in number as the whole number of corpuscles diminish. The hematoblasts are equally abundant in the circulating blood, in the spleen, the liver and the kidneys.

The order in which these different kinds of corpuscles appear in the circulation, as well as the particular stage during which each kind makes its appearance is not always as described, although the description given applies to the great majority of cases examined. In animals in which the destruction goes on rapidly, fully two-thirds of all corpuscles may have been destroyed before any of the modifications appear, and in most acute, fatal cases death ensues before they are observed at all. It is only in the more chronic, milder cases that these modifications are best studied. Their disappearance when recovery begins is in the inverse order of their appearance and goes on quite rapidly.

That these morphological variations are due to the anemia and not to any other cause may be demonstrated by practising venesection on healthy animals. The changes were called forth both in a cow and in a lamb by artificially reducing the number of red corpuscles by bloodletting.

It was held that the modified corpuscles are embryonic or transitional in character. Similar modifications seem to have been observed in human blood-corpuscles. Some regard them as undergoing a coagulation necrosis; others, as corpuscles the development of which had been asserted.

In the discussion, Dr. Welch, of Baltimore, said that many of the forms described by Dr. Smith occurred in human blood in different conditions. He had, however, been in the habit of considering them as distinct forms, rather than as transition states of the same corpuscles.

Dr. J. H. Musser, of Philadelphia, then read a paper on "Grave Forms of Purpura Hemorrhagica." In so-called idiopathic cases no cause can be discovered. Symptomatic purpura may be dependent upon anemia, cachexia, malignant disease, scurvy, rheumatism, etc. It has been maintained that purpura is identical with scurvy. Purpura presents some of the symptoms of a grave septic condition.

The paper included the report of five cases. The first was in a female, forty-eight years old, who had always been in good health, enjoyed good surroundings, had not had rheumatism, and was without a history of bleeding in the family. As the menopause approached, decided menorrhagia occurred, at first thought to be due to a uterine fibroid that had been discovered. Later, hematuria developed. The blood was always vomited, but never with food. Before each attack, the patient suffered from pain. Purpura developed and the patient died.

The second case was in a boy, who had excessive gastro-intestinal hemorrhage, and severe joint-symptoms. Purpura was also a well-marked symptom.

The third case was in a man, twenty-six years old, a mechanic, in apparent good health. He had had rheumatism in childhood. He complained of recurrent sore-throat. Subcutaneous, subconjunctival, and submucous hemorrhages developed. The pulse was 120; the temperature 103°. The purpuric spots were round, tender and variegated. There were rheumatic symptoms and mitral and aortic valvular murmurs. The fauces were congested, the uvula edematous and covered with a diphtheritic-like exudation, and food regurgitated through the nostrils. Sloughing followed. The convalescence was slow.

In the fourth case, in a male, there were also recurrent attacks of sore throat. A large hemorrhage occurred in the uvula. The patient had three relapses. The edema was extreme; gangrene of the skin of the penis and scrotum followed. Hemorrhage occurred under the skin, from the lungs, and at one time there was hematuria.

The fifth case was in a female, twenty-three years old, who was suddenly taken ill with extreme nausea, with vomiting first, of acid fluid, and later of bile. Abdominal pain and diarrhea followed, and purpura developed with subsidence of the gastro-intestinal symptoms. The joints became painful and severe headache came on. The urine was normal. Fever was present, the temperature at times reaching 105°. Examination of the blood gave negative information. The rheumatism and purpuric symptoms and the headache continued; violent conjunctivitis and iritis set in; the patient became delirious and then stuporose, and death took place in coma, six days after the first symptom. No autopsy was allowed. Dr. Musser considered the case one of rheumatic purpura, with hyperpyrexia.

Dr. Pepper, of Philadelphia, reported having recently seen two school children, aged respectively eleven and thirteen years, suffering from grave purpuric hemorrhages. In each, vision in the left eye was lost, as a result of retinal hemorrhage. In two other cases, in women, below middle age, purpura developed after rötheln. There was hyperpyrexia, followed by extensive petechia and subcutaneous hemorrhages. The fall of temperature was rapid and recovery complete.

Dr. Prentiss, of Washington, referred to a case of a boy who had suffered from purpura for a long time, with many severe exacerbations. He had hemorrhages under the skin, from the bowels and bladder. After two large hemorrhages under the skin of the abdomen, sloughing occurred. Arsenic had seemed to be the most useful remedy. The use of phosphorus was suggested. Under its influence, the intervals between the relapses gradually lengthened, and recovery was completely established.

Dr. I. E. Atkinson, of Baltimore, read a paper on "Bradycardia in Acute Articular Rheumatism," in which he stated that when the action of the heart was retarded in acute rheumatism, this is most apt to occur during convalescence from the fever and independently of cardiac complications. Rheumatic fever is one of the diseases in which a rapid action of the heart would be expected, especially during the period of pyrexia.

Dr. Atkinson reported the case of a male, colored, nineteen years old, healthy, who took a cold shower-bath, after which he developed acute rheumatism, precordial pain, and a to-and-fro friction sound at the left sternal border. Epistaxis also occurred. The area of cardiac percussion-dulness was not increased. During convalescence the pulse was usually below 57.

In another case, in a student, who was subject to rheumatism and had disease of the mitral valve, during convalescence, even before the temperature was normal the pulse-rate was from 32 to 40 per minute.

It was thought that the inflammation of the heart, stimulating the peripheral filaments of the pneumogastric might be a cause of bradycardia; perhaps, also, the rheumatic poisoning circulating in the blood. It cannot be ascribed to drugs as it occurs when these have been withheld.

DR. PEPPER, of Philadelphia, said that he had occasionally noted infrequency of the pulse after convalescence from acute diseases.

DR. BOWDITCH, of Boston, questioned whether reasoning by analogy with animals, the slowing of the heart could be ascribed to paralysis of the intrinsic accelerator center, or as suggested to stimulation of the pneumogastric.

DR. ORD, of London, said that he had also, at times, noted infrequency of the pulse after acute illnesses. He has long thought that the pneumogastric nerve played an important part in acute rheumatism.

The following officers were elected:

President.—Dr. Henry M. Lyman, of Chicago.

Vice-President.—Dr. George Ross, of Montreal.

Secretary.—Dr. Henry Hun, of Albany.

Treasurer.—Dr. W. W. Johnston, of Washington, D. C.

Recorder.—Dr. I. Minis Hays, of Philadelphia.

AMERICAN ASSOCIATION OF ANDROLOGY AND SYPHILOLOGY.

Fifth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from p. 378)

THIRD DAY—SEPTEMBER 24TH.

DR. W. K. OTIS, of New York, read a paper on "Hematuria," in which he carefully considered the diagnosis. If the anterior urethra is the source of hemorrhage, the blood will flow continuously; if the posterior urethra—the pars prostatica—the flow of blood will be intermittent; the urine itself will be clear; if the bladder is the source of hemorrhage, the blood is intimately intermixed with urine. Blood-clots in the urine—the long coagula resembling worms—indicate renal hemorrhage, as they represent casts of the ureters. If the coagula are short and broad, they come from the bladder. A low specific gravity of the urine indicates renal hemorrhage; a normal or high specific gravity, vesical hemorrhage. Ammoniacal fermentation of the urine is indicative of vesical hemorrhage. The presence in the urine of hyaline casts, or casts containing blood-corpuscles, points to renal hemorrhage; but if only vesical epithelium is found, the hemorrhage is from the bladder. If examination of the urine furnishes negative information, instrumental examination of the bladder and the resorption-test are usually conclusive. In making the instrumental test, the bladder should first be washed out; then, if the catheter is moved about, the bleeding will be renewed if the bladder is the source of hemorrhage. In making the resorption-test, a solution of iodide of potassium is injected into the bladder by means of a soft catheter. If iodide of potassium is brought into contact with a free surface capable of resorption, iodine can be demonstrated in the saliva after a short time—not longer than fifteen minutes. In hematuria this would signify that the hemorrhage is from the bladder. If the bleeding is not too profuse, the electrocystoscope enables one to make a positive diagnosis.

DR. TAYLOR, of New York, stated that in severe cases of urethritis a little blood might flow from the anterior portion of the urethra as a result of the contractions of the muscular fibers upon the mucous membrane.

DR. BRYSON, of St. Louis, stated that he has seen many cases of renal hemorrhage in which the specific gravity of the urine was high, and he considered it best not to lay too much stress on that point.

DR. WILLIAM T. BELFIELD, of Chicago, read a paper entitled "Clinical Notes on (*a*) Hypertrophy of the Prostatic Sphincter; (*b*) Relation of Rectal Distention to Arterial Depression," in which he stated that hypertrophy of the prostatic sphincter, occurring secondarily to vesical irritation from stone, etc., is a well-known condition, but occurring as an apparently independent affection, without discoverable antecedent morbid changes, it is less generally recognized. He related the histories of two patients, aged nineteen and twenty-seven respectively, upon whom he had operated within the past year, and discovered a hypertrophied condition of the prostatic sphincter. The question was propounded whether in these cases there may not have been an antecedent morbid condition in the bladder, and whether hypertrophy of the prostatic sphincter may not be a frequent cause of vesical irritability.

At a previous meeting of the Association, Dr. Belfield had reported that in dogs irritation of the mucous membrane of the rectum caused a decided depression of arterial tension, amounting sometimes to 50 per cent. Since that time he has noticed that in a supra-pubic cystotomy or other operation in which the rectal bag was employed, there was marked arterial depression, which disappeared when the bag was withdrawn.

DR. WILLIAM N. WISHARD, of Indianapolis, read a paper entitled "Notes on the Surgery of the Prostate," in which he stated that the surgery of the bladder, particularly in recent years, suggests the following principles: 1. A large percentage of cases of prostatic cystitis, not susceptible of relief by palliative treatment, can be more or less permanently relieved by surgical interference. 2. Perineal and supra-pubic incisions are best calculated to accomplish the desired results. 3. Neither of these operations is suitable in all cases; both may sometimes be required. 4. The objects of a radical operation should be the removal of the mechanical obstruction to urination, and to secure rest and drainage for the bladder. Dr. Wishard stated that it must be borne in mind that at the time when many cases of disease of the prostate apply for treatment, the mechanical obstruction is by no means the most serious condition present. Resultant renal disease, loss of muscular power and thickening and diminution in the size of the bladder render more or less futile both palliative and radical efforts at relief.

DR. J. BLAKE WHITE, of New York, stated that a short time ago a patient came under his care who manifested very distressing symptoms of vesical irritability, frequent and painful micturition, etc.; the bladder and right ureter were made out to be dilated. Supra-pubic cystotomy was performed, and the prostatic sphincter

was found to be retracted. The sphincter was dilated with the finger, drainage was kept up for fifteen days, and the patient made a satisfactory recovery.

Dr. John P. Bryson, of St. Louis, stated that he did not consider as mechanical the failure of the heart that attends operations about the bladder, but as a general nervous disturbance, perhaps allied in some way to urinary fever, and which must be guarded against by the surgeon.

Dr. W. K. Otis, of New York, stated that he has reported a case in which a tumor of the prostate, about the size of the end of a man's thumb, was removed, and eight ounces of residual urine withdrawn. Eighteen months after the operation, the patient was still perfectly well.

Dr. Arthur T. Cabot, of Boston, read a paper entitled "Observations upon the Surgery of the Ureter," in which he reported the results of some investigations upon the anatomy of the ureter, with reference to its surgical accessibility in different parts of its course, and with the especial object of determining how best to reach and remove impacted stones in the ureter. When possible, it is always best to use the extra-peritoneal incision for the removal of a stone. The search for the ureter is greatly simplified by a knowledge of the fact—not mentioned in the usual descriptions of the anatomy of the ureter—that it is in relation with that part of the peritoneum that becomes adherent to the spine. After the ureter dips down into the pelvis, it is less easily located, because it does not bear any fixed relation to a bony landmark; but fortunately, in the cases in which a stone in the ureter is sought for, we have as a guide a hard body that is readily palpable. To reach the ureter in the upper part of its course, perhaps no better incision can be chosen than that proposed by Israel: A line is drawn from a point on the anterior edge of the sacro-lumbar mass of muscles, just below and parallel to the twelfth rib, toward the middle of Poupart's ligament, to the line of incision usually made for tying the iliac artery; thence again toward the middle line and ending at the external border of the rectus muscle. According to the seat of the calculus, the incision will be made on the posterior, middle or anterior third of this line.

Dr. Edmund E. King, of Toronto, made an "Exhibition of Complete Double Ureters of Both Kidneys." He also stated that at ten post-mortem examinations made, he had discovered three cases of supernumerary ureters.

Dr. George E. Brewer, of New York, read a paper on "The Dry Poultice in the Treatment of Epididymitis." He called attention to a method of treatment that he had found very useful in the management of acute and chronic epididymitis. The inflamed testicle is covered with a thick layer of cotton-wool, which is surrounded by a layer of rubber protective tissue extending beyond the cotton to the healthy skin of the scrotum; a gauze bandage is next snugly applied and the whole is held in place and supported by a suspensory bandage. By this means the heat and moisture, retained by the impervious rubber tissue, act in the same manner as an ordinary poultice. The relief to pain afforded by this method of treatment is often strikingly prompt; but its chief advantage lies in the fact of its marked influence in promoting the rapid dissipation of the inflammatory induration, often so difficult to accomplish. Between twenty-five and thirty cases of epididymitis had been treated in the manner indicated, with most satisfactory results. In nearly all, the relief of pain was prompt; and in all, the absorption of the induration was strikingly apparent.

Dr. John P. Bryson, of St. Louis, inquired whether this method of treatment caused the disappearance of the little fibrous nodules that form, or lessened the number of them.

Dr. James P. Tuttle, of New York, asked how much pressure should be applied in bandaging the testicle.

Dr. Brewer stated that he had not noticed the disappearance of the fibrous nodules referred to by Dr. Bryson. The cases were in hospital patients, and soon lost sight of. In reply to Dr. Tuttle's question, Dr. Brewer said that only a moderate degree of pressure should be employed.

Fourth Day—September 25th.

Dr. John P. Bryson, of St. Louis, read a paper on "The Radical Cure of Urethral Stricture by Restoration of the Mucous Membrane to a Healthy Condition." He defined stricture of the urethra as a chronic contracting peri-urethritis, caused by the leakage of the urine or of some of its constituents through a damaged or absent mucous membrane. Urethral stricture may be inflammatory or cicatricial. In the first the mucous membrane, damaged though it be, is still present; in the second the mucosa has been replaced by cicatricial tissue. Any therapeutic procedure, therefore, must aim primarily at a restoration of the mucous membrane to a normal condition.

Dr. Bryson said that his method of treating stricture was based upon the theory that if the mucosa could be restored to a normal condition while the constricting band was undergoing softening and inflammatory involution, a radical cure could be hoped for. Linear strictures are often permanently benefitted by the use of the sound alone, but this is entirely inadequate in case of annular strictures. Dr. Bryson then reported the history of a case of annular stricture that was treated by cutting and divulsion with only temporary relief, and that finally was permanently cured by intermittent dilatation combined with topical treatment directed to the restoration of the mucous membrane.

Dr. L. Bolton Bangs, of New York, read a paper on "The Treatment of Urethral Stricture." He defined as stricture an unnatural narrowing of the urethra in any part of its length. The bulbous portion of the urethra is the largest in caliber, not only in the adult, but also in infants, and is capable of the greatest degree of physiological distention. Dr. Bangs reaffirmed his belief in the principle formulated by Dr. Otis, namely, that the caliber of the human urethra is proportionate to the circumference of the penis. He considered the treatment of strictures by divulsion both unsurgical and unscientific. The influence of the instrument is distributed more or less beyond the strictured areas, and the resulting cicatrix is irregular and often decidedly contracting. He also does not approve of electrolysis. When a current is employed sufficiently strong to have any effect upon the tissues at all, it acts as an irritant and gives rise to inflammatory deposits. Dr. Bangs regards gradual dilatation as sufficient for soft, non-fibrous stric-

tures of the posterior urethra, or of the bulbous or penile urethra; but for all strictures of large caliber requiring interference, he advocates treatment by internal urethrotomy and thorough division. If the stricture is of small caliber, or is complicated by fistulæ, either in the penile urethra or perineum, or if there be indurated cicatricial deposits deeper than four and a half inches, he advocates, in conjunction with internal urethrotomy, an external perineal urethrotomy combined with prolonged perineal drainage.

DR. JAMES P. TUTTLE, of New York, read a paper on "The Treatment of Urethral Stricture and Its Resulting Conditions by Extreme Gradual Local Distention and Without Cutting, Including a Brief *Résumé* of Fifty Cases." He said that perhaps the best practical definition of stricture is that of Dr. White: "Stricture is an abnormal lessening of the caliber or the dilatability of the urethral canal, associated with changes in the mucous, muscular, or submucous structure constituting its walls." Dr. Tuttle stated that he had made measurements of the stretched mucous membrane of the urethra in fifty cadavers and in more than one hundred living subjects with healthy urethræ. In all cases certain constrictions and dilatations were found, more or less uniform, and no doubt perfectly normal. These natural anatomical conformations demand careful consideration and conservatism. Dr. Tuttle stated that he had practised internal dilating urethrotomy for eight years, but more recently he had abandoned the cutting operation in most cases, substituting extreme local dilatation at the point of stricture. To accomplish this end Dr. Tuttle devised a new instrument, called a urethral dilator, which he has used for more than a year, and with which he has obtained good results.

DR. ROBERT W. TAYLOR, of New York, stated that the profession is apt to run to extremes in the treatment of strictures. To Dr. Bangs is largely due the credit of introducing perineal urethrotomy, which is a most admirable and beneficial procedure in certain cases.

DR. W. K. OTIS, of New York, said that in cases in which the stricture was situated far back in the urethra, and surrounded by hard, cicatricial deposits, it seemed useless to attempt the removal of these by any but the surgical method of external urethrotomy.

DR. JOHN A. FORDYCE, of New York, stated that he considered Dr. Bryson's definition of stricture—a chronic contracting peri-urethritis—an excellent one, but, in his opinion, it did not always depend upon an infiltration of urine; in some instances, it was caused by the entrance of gonococci (or the chemical products to which they give rise) into the glandular or epithelial tissues.

DR. W. FRANK GLENN, of Nashville, read a paper on the "Treatment of Gonorrhea," in which he related that he has met with great success in the treatment of gonorrhea by the use of mild solutions of chloride and iodide of zinc. The strength usually employed is one-half grain of chloride and one grain of iodide to the ounce of water. This solution, which can be further diluted if necssary, is to be injected into the urethra three or four times daily.

DR. TAYLOR said that the personal element entered largely into the treatment of gonorrhea; others cannot always obtain similarly good results from the same course of treatment. He considered chloride of zinc useful in some cases in the declining stages of urethritis, but he would be loath to use it deep down in the canal.

DR. WILLIAM JUDKINS, of Cincinnati, stated that he has had great success in some cases by applying the yellow oxide of mercury on a sound, or by introducing it into the urethra on a pledget of cotton.

DR. OTIS said that he had given salol an exhaustive trial, but was only successful in discoloring the urine.

AMERICAN ORTHOPEDIC ASSOCIATION.

Fifth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from p. 382.)

THIRD DAY—SEPTEMBER 24TH.

DR. A. B. JUDSON, of New York, read a paper upon "Malignant Disease of the Vertebræ Simulating Pott's Disease." Three cases were reported in which Pott's disease and malignant vertebral disease had been confounded by himself and other observers. The first patient, a boy of four years, died three months after the appearance of the symptoms. The other patients, men, aged respectively thirty-five and forty-two years, survived the first symptoms one or two years. In each case an autopsy was made, correcting the *ante-mortem* diagnosis in two cases and confirming it in one. In no case was there distinct kyphosis. In two cases there was paraplegia, the paraplegia dolorosa of malignant disease and not that of Pott's disease. The chief symptoms were general prostration, pain, and disability, located in the back. These patients were very ill, which cannot well be said of most patients affected with Pott's disease. They had severe pain and extreme disability in the back, from which Pott's disease is so free that when we hear of pain in the back and spinal disability, the first thought is to eliminate spinal caries. In brief, the chief differential points are: (1) Deformity, present in Pott's, absent in malignant disease; (2) Local disability, and (3) Local pain, both absent in Pott's and present in malignant disease.

The paper of DR. CHARLES L. SCUDDER, of Boston, on "Paralysis in Pott's Disease," was read by Dr. WILLIAM L. BULLARD, of Boston. The case recorded by Dr. Scudder is unique from the existence of hydrocephalus, together with spina bifida, rotary lateral spinal curvature, while the mental condition was unimpaired. Dr. Scudder called attention to the necessity of dividing tendons, when possible, near enough to the muscular belly to maintain a connection between the severed tendon and its muscle, thus preventing a matting together of the tendons in their sheaths, as happens when the division is made lower.

Dr. Bullard expressed the belief that the contractures due to spastic paraplegia must be carefully distinguished from those due to other causes. They are totally different from the contractures found in old cases of anterior poliomyelitis, the so-called paralytic contractures, and are not to be confounded with the conditions existing in congenital varus and club-foot, which are usually due to wholly different causes. He is inclined to believe that the spastic paraplegia is not directly due to any effect on the cord occasioned by the spina bifida, but is the direct result of the accompany-

ing hydrocephalus. The exact steps by which this result is brought about are not yet wholly known.

Dr. Samuel Ketch, of New York, in a paper upon "Prognosis in Pott's Disease," considered the subject from the following standpoints: 1. Regional prognosis; 2, age of the patient; 3, etiology; 4, complications, and 5, thoroughness of treatment. Seventy-five cases taken from the case-books of the New York Orthopedic Hospital were analyzed with the following results: 37 were males, 38 were females; 28 cases were from 1 to 5 years of age; 31 cases were from 5 to 10 years of age; 16 cases were above 10 years of age.

The average time of treatment in obtaining a cure was: for disease in the superior region, $26\frac{1}{5}$ months; in the middle region, $64\frac{8}{25}$ months; in the inferior region, $47\frac{1}{25}$ months.

As a complication, abscess was frequent in disease in the middle and inferior areas, developing in the course of the disease in nearly 50 per cent. Paraplegia may be looked for more frequently in disease of the superior and middle areas; rarely in disease in the inferior.

In some cases recession of deformity had occurred under treatment, but the prognosis as to the recession of the kyphosis was uncertain. As a rule, better results, as regards deformity, could be expected in disease of the superior and inferior regions.

In order to obtain good and permanent results, treatment must be long continued. Dr. Ketch cautioned against the tendency to remove apparatus early. Under thorough mechanical treatment, abscess is frequently prevented, and, when present, often disappears, thus favorably influencing the eventual prognosis.

Dr. B. E. Hadra, of Galveston, read a paper entitled "Proposed Treatment of Pott's Disease by Wiring the Vertebral Processes." He described his method of wiring the spinous process, the subject being considered from a theoretical standpoint. The proposed method is already well known to the American profession.

Dr. De Forest Willard, of Philadelphia, read a paper on "The Operative Treatment of Tuberculous Caries of the Spine," giving as the indications for surgical interference: (1) Pus accumulations; (2) the removal of carious bone; and (3) the relief of paraplegia.

The following are the conclusions at which he had arrived: (1) After ankylosis has resulted, recumbency, extension, suspension and support of the diseased vertebræ are important means to obviate the necessity and to further the success of operative procedures. (2) Dormant and caseating foci may well be treated on the expectant plan. (3) Liquefying and caseating collections should be tested with the aspirator and injected with iodoform emulsion; the operation being repeated unless pus is discovered. (4) If sero-purulent fluid is withdrawn, injections may still be relied upon to assist the system in conquering and limiting the tuberculous process. (5) When pure pus is present the abscess should be incised, the cavity washed out by a long-continued flow of hot sublimate solution, but manipulation should not be practised upon the walls of the sac lest a fissure be occasioned and entrance of tuberculous poison into the system be facilitated. The incision should be carefully sutured and from thirty to sixty grains of iodoform dissolved in boiled olive oil should be injected and retained in the cavity. (6) When the situation of the abscess is in the lumbar region and the case permits of a thorough removal of the sac, the abscess should be incised and its walls, together with all tuberculous tissue, should be removed with knife, scoop and scissors. (7) Drainage-tubes should not be retained longer than necessary, as they may give rise to the formation of sinuses. (8) When excision of the wall is impossible, free incision and drainage, coupled with iodoform injections, are palliative and will assist in facilitating the removal of the diseased tissue. (9) Excision of diseased bone-tissue is feasible, when this is situated in the arches, and occasionally in the lumbar region when the articular and transverse processes or the side of the body is affected. (10) The preceding is an operation limited in scope, and should be practised only in the cases mentioned. For purposes of drainage, however, it is beneficial.

For the relief of pressure-paralysis the laminæ are to be removed only after a thorough trial and failure of long-continued horizontal extension, counter-extension and fixation, unless dissolution is rapidly threatened. In the majority of cases of pressure-paralysis, recovery takes place after extension and mechanical treatment. The removal of the laminæ is troublesome except in the upper dorsal region, and entails considerable risk to the patient. In caries of the arches, and when the cord is compressed from behind, it is certainly justifiable. When the pressure is anterior, either from deposit of caseous material, from tuberculous infiltration, or from inflammatory deposit, no permanent benefit will be secured, even though temporary gain is apparent.

Mr. Howard Marsh, of London, spoke particularly of laminectomy, which he considered of diagnostic value.

Mr. Howard Marsh, of London, read one of the most interesting papers of the session upon "Pott's Disease in Middle and Advanced Life." He admitted that in a large majority of cases tuberculosis commences between the ages of three and nine, but he had seen several instances in which it had developed in infants under a year old, and in at least two infants under eight months old. It may also occur (though more and more rarely as years advance) at any subsequent period up to extreme old age. At a still later period, in persons over sixty, surgical tuberculosis still occurs, though with increased rarity.

Mr. Marsh stated that his experience accorded with that of Sir James Paget, who, in a paper on "Senile Struma," remarks that persons over sixty are more often scrofulous than those between thirty and fifty, and adds that there is not one of the so-called seats of election of scrofula in the young (lymph-glands, bones, joints, the spine, the testis, and other parts) in which he has not seen the disease in persons over sixty. Of all the forms of tuberculosis in persons over sixty, however, Mr. Marsh found Pott's curvature the most rare.

In conclusion, he believed that the diagnosis between tuberculous disease and osteo-arthritis in these instances could readily be made.

Cases of tuberculous disease do not, as a rule, present disease of more than one part. It is not known that osteo-arthritis produces angular curvature. In many cases suppuration occurs, a result rare in osteo-arthritis. So trustworthy an observer as Sir James Paget states

that he has himself met with tuberculous disease of the spine in old subjects. In the College of Surgeons there is a specimen of the cervical vertebræ removed from the body of Dr. Buckland, dean of Westminster. The osseous structure of the lateral masses and adjacent parts of the atlas and axis is deeply eroded and excavated, and the two bones are displaced in relation to one another. Thus the appearances exactly accord with those that are found in caries of the spine in childhood. The dean at the time of his death was seventy-two. He died of general weakness and melancholia, and the spinal disease was not suspected during life. No statement is made in the museum catalogue as to the nature of the disease, but Mr. Marsh thinks there can be no reasonable doubt that it was tuberculous. There can be no doubt that tuberculous disease of other parts is by no means very rare in the old. These cases are exactly similar to cases of tuberculous disease of the spine as seen in the young.

DR. L. A. WEIGEL, of Rochester, read a paper upon "Cervical Spondylitis," and reported a case in a boy, eight years of age, in which the severity of the symptoms compelled the patient to maintain the recumbent posture; but no improvement in the paralytic symptoms followed. Subsequently a retro-pharyngeal abscess developed. After treatment by recumbency, combined with weight-traction, rapid improvement in the symptoms took place and in the course of a few months the boy completely recovered. The points of interest in the case are: 1, the long continuance of the paralytic symptoms, notwithstanding the enforced recumbency; 2, the simultaneous existence of paralysis and abscess; 3, the rapid improvement under treatment by extension combined with recumbency.

DR. BENJAMIN LEE, of Philadelphia, read a paper on "The History of the Use of Suspension in Pott's Disease." He claimed the distinction of having been the first to propose, and to use in the treatment of Pott's disease, self-suspension by means of a cord and pulley attached at some distance above the head, the other extremity of the cord being placed in the hands of the patient. He maintained that in all cases of paralysis accompanying or resulting from spinal caries, the use of some form of mechanical splint, in conjunction with suspension, will permit a successful result to be more rapidly, more surely, and more perfectly obtained.

DR. AP MORGAN VANCE, of Louisville, read a paper upon "Recumbency in the Treatment of Pott's Disease," in which he expressed the belief that surgeons often overlook the possible good of temporary treatment by recumbency, when mechanical treatment has failed to relieve the symptoms or when circumstances prevented the proper use of a portative appliance. Dr. Vance has seen more rapid improvement of the bony lesion in cases of paralysis in which recumbency has been enjoined, and in other cases in which intercurrent disease has necessitated this position for a long period. Objections to this mode of treatment are frequently made by practitioners and parents on the plea that the general health will suffer. Dr. Vance has yet to see any bad results from it, the children usually improving and particularly if attention is given to massage of the extremities and proper feeding. This temporary detention in bed, he believes, is often the turning-point toward recovery, and the difficulties otherwise experienced in the mechanical are no longer encountered.

DR. CHARLES C. FOSTER, of Cambridge, Mass., read a paper on "Extension in Bed in the Treatment of Caries of the Spine," in which he said that extension is applicable in caries of all parts of the spine, but is especially useful in caries of the cervical region. Extension reduces deformity, relieves pain, subdues inflammation and removes the liability to abscess, thus making the disease less exhausting to the patient, shortening its duration and minimizing the amount of repair necessary. Bed is the proper place for a patient during the active stage of caries. It is said that a child will pine if denied fresh air and exercise. Dr. Foster is sure that children *with carious joint-disease* will thrive in bed for months at a time; but when so confined they need constant attention. Motion must be reduced to a minimum, and the patient should be handled gently and carefully. The child soon learns the benefit of quiet and ceases its attempts to move.

Extension is obtained by weights, the cords running over the head and the foot of the bed, and being attached to waist-belts, chest-belts or Sayre head-straps. Surprisingly light weights are required. Such treatment cannot be carried out in out-patient or tenement-house cases; but this is the fault of the cases, not of the treatment. Such cases should not constitute a standard. Their treatment is, and must be, makeshift rather than ideal. From time to time the condition of the spine may be best studied and the progress of the disease appreciated by palpation of the affected vertebræ, a delicate and difficult procedure, but exceedingly valuable.

DR. REGINALD H. SAYRE, of New York, read an interesting and valuable paper on "Traction and Fixation in Pott's Disease," which will appear in a future number of THE MEDICAL NEWS.

The paper of DR. V. P. GIBNEY, of New York, upon "Traction and Fixation in Pott's Disease," was read by title, and will appear in a subsequent number of THE MEDICAL NEWS.

DR. E. H. BRADFORD, of Boston, read a paper on the "Comparative Value of the Prevalent Methods of Treatment of Caries of the Spine," in which he said that the treatment of caries of the spine must necessarily be based on the pathological conditions present; as these vary, the treatment must necessarily vary. The plan of treatment should also be adapted to the portion of the spinal column affected, for the caries of the spine differs somewhat in its course in different portions of the spinal column.

The methods of treatment may be grouped as follows: by recumbency; by mechanical appliances; and by plaster bandages and corsets.

Treatment by recumbency is of great value in the acute stages, and is indicated whenever patients find great disability in going about, and are disinclined to walk or run, and are more contented when lying or sitting down. The recumbency should, however, be thorough; the patient should be kept upon the back, with a proper arrangement of pads, so that sloughing be prevented. He should be fixed, by means of a frame or straps, so that sitting up or turning in bed should be impossible; and it should be so arranged that the patient can be carried about freely, so as to be given the benefit

of fresh air. Traction by weight and pulley applied to the limbs or to the neck is sometimes of great assistance. The necessary limits to the benefit to be derived from recumbency are determined by the patient's general condition. It is manifestly impossible that the patient should remain in the recumbent posture until cicatrization has taken place, as this process involves years. For this reason the treatment by recumbency is only the treatment of a stage. When patients begin to appear apathetic and listless, when general nutrition seems to fail, after they have been kept recumbent for a long time, this treatment should be discontinued. Recumbency, by which is also meant fixation, will be found to be the most efficient means of preventing increase of the curvature.

Mechanical appliances are an essential part of the treatment of caries of the spine; for whether recumbency is maintained or not, at some stage some form of mechanical appliance, either a corset or a brace, must be used in order to enable the patient to go about without danger to his back.

The form of mechanical appliance will necessarily vary according to the region of the spine affected, but Dr. Bradford has found one constructed upon the principle of the antero-posterior support most serviceable. When head-supports are necessary he uses both the jury-mast, the wire chin-support, and the Thomas collar, or the Taylor oval ring; the latter being on the whole preferred in the majority of cases in which care can be given in adjusting it. The jury-mast is equally efficient, but has the objection of unsightliness.

Treatment by mechanical appliances has the disadvantage of requiring skill and experience on the part of the surgeon, and attention on the part of the parents, Given these conditions, however, it furnishes the most efficient means of treatment with portable apparatus; and the patients can be thoroughly treated in this way. in many instances, without recumbency at all.

The value of plaster-jackets is very great, and for the ordinary treatment of hospital cases to which great care cannot be given by the parents, the plaster-jacket alone may be considered the most ready means of treatment. Skill and care are required to properly apply plaster-jackets, which have the disadvantage of uncleanliness and discomfort. The split corset, or leather corset, or wood corset, or cloth corset, stiffened by wire, is of value in the stage of convalescence, the latter being of the least value, but in the acute stages the permanent corset is preferable.

Caries of the spine is the most curable of affections, but requires treatment for a long time to insure a perfect cure, the disease running its course in from three to five years.

Fourth Day—September 25th.

Dr. Bernard Bartow, of Buffalo, read a paper on "Treatment of Pott's Disease, with Especial Reference to the Early Stage," in which he said that when treatment was begun in the early stage, better results would be obtained than when begun at a later stage. Then the focus of the disease was small; the shape of the vertebra was unchanged; restraint from movement was more likely to encapsulate the focus. Complete arrest of the disease, without the formation of angular deformity, might be expected in the greater number of cases.

Dr. V. P. Gibney, of New York, read a paper entitled "A Further Contribution to Typhoid Spine." He reported a case of typhoid spine in a man, aged forty-five, which had existed for twenty-three years, and in which the cervico-dorsal region was involved. The conditions presented were practically the same as those previously reported as characteristic of this condition.

Dr. E. H. Bradford, of Boston, read a paper on "The Treatment of Congenital Dislocations at the Hip," and showed photographs of appliances for the treatment of this condition after the method of Dr. Buckminster Brown. The modifications of Brown's method were such as to allow the patient to be carried about, but not to stand. When convalescence is established, protective walking-apparatus made of aluminum is applied.

Dr. Bradford also read a paper entitled "Means of Recording Rotation in Lateral Curvature," and showed photographs of his method of recording rotation in lateral curvature, and described the different methods of its application.

Dr. Bradford also read a paper entitled "Modifications in the Treatment of Lateral Curvature," and showed photographs of appliances for increasing the flexibility of the spinal column in lateral curvature as preliminary to the use of plaster-jackets or other corsets.

Dr. N. M. Shaffer, of New York, read a paper on "Elongation of the Ligamentum Patellæ as a Factor in the Production of Certain Knee Troubles and Difficulties in Locomotion," and reported a number of unique and interesting cases in which from various causes the patellar tendon had become elongated.

Dr. Royal Whitman, of New York, read a paper entitled "Observations on Torticollis, with Particular Reference to the Significance of the So-called Hematoma of the Sterno-mastoid Muscle," which is to appear in The Medical News. From a review of the literature, and from clinical observation, he had concluded that congenital torticollis was usually of intra-uterine origin, and not, as stated by many writers, the result of injury at birth. He presented a report of 264 cases of torticollis, showing the affection to be more frequent in females than in males, and that the sides of the neck are equally liable, although the opposite opinion usually prevails.

Dr. George W. Ryan, of Cincinnati, read a paper on "Rheumatic Spondylitis," in which he said that the symptoms were difficulty in locomotion, rigidity, and pain; later, a rounded kyphosis, suggesting tuberculous spondylitis, but distinctly different in its character. The prognosis is bad. The treatment is aimed chiefly to the relief of the pain, and consists of support, local blisters, the Paquelin cautery, and internal medication. A case was reported in detail, and photographs illustrating the deformity were shown.

Dr. V. P. Gibney, of New York, read a paper entitled "The Definition and Scope of Orthopedic Surgery," in which he endeavored to show that the limitations placed upon the orthopedic surgeons by Dr. Shaffer in his paper "What is Orthopedic Surgery?" were not acceptable to the majority of American orthopedic surgeons. Dr. Gibney maintained that the orthopedic surgeon should be competent and feel free to treat any case of chronic joint-disease or deformity by any means whatsoever, mechanical or operative, and without assistance to carry

it on to a successful issue. In many cases the mechanical after-treatment was of more importance in preventing a return of the deformity than was the operation, and it was not right to turn a case over to the operative surgeon for the operation when he lacked the knowledge to properly carry out the mechanical after-treatment. The orthopedic surgeon should feel competent to manage his cases himself, and independent of any assistance at the hands of the general surgeon.

DR. P. REDARD, of Paris, read a paper on "The Relation of Scoliosis to Club-foot." He insisted upon the importance of a study of the causes of spinal curvature from the point of view both of prognosis and of treatment. He maintained that in a large number of cases of scoliosis an evident relation exists between club-foot and the spinal curvature. The inequality of length of the lower extremities dependent upon club-foot occasions the assumption of vicious attitudes, which in turn are followed by actual scoliosis. Next to vicious positions assumed in writing, club-foot is one of the most frequent primary causes of scoliosis. In all cases of incipient scoliosis it is important to examine the lower extremities, so as to determine whether or not club-foot or any other cause of inequality of length of the members exists.

DR. F. BEELY, of Berlin, read a paper on "The Pathological Anatomy of Lateral Curvature of the Spine," in which he said that traction and pressure may cause an increase or a cessation of the development of osseous tissue in a vertebra, increasing the horizontal diameter, diminishing the thickness on the side of the pressure and increasing it on the side of the traction. The differences between the vertebræ of the adult and those of the child were pointed out, and it was shown how pressure and traction, acting during the process of growth, lead to the deformed vertebræ that are found in scoliotic spines. The differences in the mechanism of rotation in the kyphotic spine and in lordosis, and the causes of the narrowing and widening of the inter-spinous sulci, were pointed out.

DR. DE FOREST WILLARD, of Philadelphia, read a paper on "Operative Treatment of the Deformities Resulting from Infantile Spinal and Cerebral Spastic Paralysis," which will appear in THE MEDICAL NEWS. In illustration he reported five cases of anterior polio-myelitis and three of birth-palsy dependent upon organic cerebral disease. As a result of his observations he maintained that many apparently hopeless cases could by appropriate treatment be put upon their feet. However great the deformity, an attempt at correction should be made, so as to enable the individual to walk. Atrophied limbs can be straightened, and then be provided with apparatus for locomotion. Even greatly atrophied limbs may be developed by exercise. The improvement will be continuous. In most cases, however, better results are secured more quickly and more readily by surgical than by mechanical means. Treatment should be instituted early, in order to obviate pain and to save time. Tenotomy and myotomy cannot remove the causal disease, but the results obtained are promotive of the health and happiness of the individual. The deformities of infantile paralysis are preventable by the use of suitable apparatus; but when the deformity has occurred, such surgical measures should at once be instituted as will enable the patient to walk. Deformity is more apt to recur in cases of spastic paralysis than in cases of infantile paralysis.

DR. L. A. WEIGEL, of Rochester, read a paper entitled "The Operative Treatment of Spastic Paralysis," in which he reported a case in the person of a girl of fourteen years, upon whom he had operated and then applied a brace, with most satisfactory results. The paper is to be published in THE MEDICAL NEWS.

DR. BENJAMIN LEE, of Philadelphia, read a paper on "Injuries to the Sacro-iliac Junction." Such injuries, attended with imflammation, he maintained were apt to occur in obese women, especially as a result of falls upon the buttock or hip. Lameness and sciatica are the most conspicuous symptoms. The best treatment is strong lateral compression of the pelvis—splinting the pelvis. To avoid the necessity of stooping on the part of the patient, Dr. Lee has devised an appliance called a "teledactyl" (long finger), consisting of a spring-forceps at the end of a cane, operated by a cord passing to the handle and provided with a ring for the index-finger. By means of this device objects of moderate weight, and as small as a pin, can be prehended.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING SEPTEMBER 26, 1891.

HOEHLING, A. A., *Medical Inspector.*—Ordered as a member of Medical Examining Board.

HARMON, G. E. H., *Surgeon.*—Ordered to the U. S. S. "Yorktown."

BOYD, JOHN C., *Surgeon.*—Detached from the U. S. S. "Yorktown," and granted leave.

DUBOIS, F. L., *Medical Director.*—Detached from Navy Yard, Portsmouth, N. H., and wait orders.

AYERS, J. G., *Surgeon.*—Detached from the U. S. S. "Wabash," and ordered to Navy Yard, Portsmouth, N. H.

CORDEIRO, F. J. B., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Wabash."

NORTON, O. D., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Petrel."

HALL, JOHN H., *Surgeon.*—Ordered to appear before the Retiring Board.

MARSTELLER, E. H., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Petrel," and granted one month's leave.

NORTON, O. D., *Passed Assistant Surgeon,*—Detached from special duty at Naval Academy, and ordered to the U. S. S. "Petrel."

HALL, J. H., *Surgeon.*—Detached from Naval Hospital, Chelsea, Mass., and placed on waiting orders.

BRADLEY, G. P., *Surgeon.*—Ordered to Naval Hospital, Chelsea, Mass.

GRAVATT, C. U., *Surgeon.*—Ordered to Naval Hospital, Brooklyn, N. Y.

GARDNER, J. F., *Passed Assistant Surgeon.*—Detached from Naval Hospital, New York, and ordered to the Naval Station, New London, Conn.

NORTH, J. H., *Assistant Surgeon.*—Detached from Navy Yard, New York, and wait orders.

LUNG, GEORGE A., *Assistant Surgeon.*—Detached from Naval Station, New London, Conn., and ordered to the Navy Yard, New York.

SIMONS, M. H., *Surgeon.*—Detached from the "Enterprise," and to hold himself in readiness for sea-service.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

A CASE OF FRACTURE OF THE TWELFTH DORSAL VERTEBRA, FOLLOWED BY INJURY TO THE SPINAL AND SYMPATHETIC NERVE-SUPPLY OF THE BOWEL IN THE REGION OF THE ILEO-CECAL VALVE;

Intestinal Hemorrhage and Death on the Seventh Day.[1]

BY J. T. ESKRIDGE, M.D.,
OF DENVER, COLORADO.

M. J. A., male, thirty-three years of age, born in Illinois, by occupation a carpenter, a robust, muscular fellow, had enjoyed excellent health until the time of the accident that was the cause of his death. On July 9, 1890, whilst engaged in work on a large nine-story building in Denver, a cage with its contents of brick, weighing about two thousand pounds, as it was passing over him only a few feet above his head, fell, striking him on the crown of the head, and carrying his head between his feet and bending the spine sharply backward in the dorso-lumbar region. The rope by which the cage was suspended did not allow it to descend nearer the floor than about eighteen inches. The man was imprisoned between the cage and the floor only a few minutes, but when released he was unconscious and remained so about half an hour. On regaining consciousness his legs felt numb and were paralyzed for two hours. He was removed to the Arapahoe County Hospital, where I saw him four hours after the occurrence of the injury. An examination showed that there were neither paralysis, sensations of numbness, nor loss of tactile sense in any portion of the body or limbs. There was no incontinence of urine, but he was unable to expel the contents of the bladder. The back, at the junction of the dorsal and lumbar vertebræ, was arched backward and the soft tissues over the upper lumbar and four lower dorsal spines were greatly swollen and acutely sensitive to the touch. He complained of great pain in this portion of the back and said that he had uncomfortable sensations in the lower portion of the abdomen. His temperature was 100.4°; the pulse, 100; respiration, 24. A cloth saturated in a lotion of equal parts of laudanum, arnica, and aconite (tincture) was applied over the sensitive portion of the back, and a surface, ten by four inches, was covered with a thick ice-poultice (equal parts of pounded ice and bran). His suffering was so great that it required half a grain of morphine, hypodermatically, to relieve it. The next morning he was feeling quite comfortable. The back was free from pain so long as he was left undisturbed. He evacuated his bladder without assistance. The urine was free from albumin and sugar. He enjoyed his breakfast, which consisted of eggs, toast, and milk. His temperature was now 100.4°; respiration, 18; and pulse, 80. In the evening his temperature went up to 101°, but he felt comfortably and ate well. No morphine had been required since the night of his admission into the hospital. The ice-poultice was continued.

During the next four days he continued to improve. His temperature varied from 99° to 100.3°. He ate well and had no difficulty with the bowels or bladder. By the end of the fifth day (July 13th) the swelling and tenderness in the back had nearly all disappeared, and slight crepitus could be detected over the spine of the twelfth dorsal vertebra. The temperature in the morning was normal and in the evening was 99.5°. The improvement continued until about noon of the sixth day after the accident, when he ate quite freely of boiled cabbage, which, contrary to orders, had been served to him by one of the porters of the hospital. Two hours after partaking of the cabbage he began to vomit and continued to do so every few minutes for several hours. The vomitus, at first, consisted of undigested food, including cabbage, then of mucus, and lastly of a dark coffee-grounds-looking substance. He complained of great pain in the stomach and in the lower portion of the abdomen. His strength failed rapidly, and the next morning he was in a state of profound collapse. I saw him at 11 o'clock. His temperature was 101°; pulse, 160; and respiration, 48. His bowels had been opened twice the day before, after eating the cabbage, but not at all that morning. His abdomen was irregularly and greatly distended, especially from the umbilicus downward and to the left. Death took place twenty minutes later (11.20 A.M.), consciousness continuing to the last.

Sectio cadaveris at 12.30 P.M., one hour after death, in the presence of Drs. Davis, Boice, and Baker. The brain was not examined. The heart and lungs were nearly normal in appearance and free from disease. On opening the abdominal cavity no peritoneal inflammation was found and the cavity did not contain an undue amount of fluid. On superficial inspection, the stomach, bowels, and other viscera presented a normal appearance, except the lower portion of the ileum and the upper portion of the colon. This portion of the bowel was enormously distended, almost black in color, and accounted for the irregular distention of the abdomen that I had observed a few minutes before death. The stomach was not inflamed, but it contained several ounces of watery fluid stained with blood. On slitting open the small intestine from above down-

[1] Paper read at the meeting of the American Neurological Association, held in Washington, D. C., September 22–25, 1891.

ward, nothing abnormal was found except a small quantity of fluid colored like that found in the stomach, until the lower portion of the ileum was reached. At a point five inches above the ileo-cecal valve, the bowel was abruptly distended to its utmost, and the swollen mucous membrane seemed to completely occlude the caliber of the bowel at this point, so that none of the contents of the distended portion of the intestine could reach the undistended portion. The distention reached from a point in the ileum five inches above the valve to a point in the colon six inches below the valve, and ended as abruptly below as it had begun above, and the swollen mucous membrane below prevented the escape of the contents of the distended bowel into the gut below as effectually as was the case at the upper portion of the distention. A ligature was thrown around the bowel above and below the distended portion, which was excised for further examination. The remaining portion of the colon was examined and found normal. It was not stained with blood. The intestine immediately above and below the seat of distention seemed contracted and considerably smaller than normal. On examining the excised portion of the bowel, which was of a bluish-black color, it was found to be eleven inches in length and six inches in diameter at the seat of greatest distention, a point just below the ileo-cecal valve. This portion of the bowel contained a little over two quarts of dark, semi-fluid blood. The mucous membrane and other coats of the bowel were almost black, soft, and everywhere infiltrated with dark, fluid blood. The vermiform appendix was dark and everywhere infiltrated with blood, but its blind pouch was not enlarged. None of the other viscera of the abdomen presented anything abnormal.

On exposing the spinal column, both in front and behind, the bone-lesion was found to involve the twelfth dorsal vertebra. After examining the cord, the sixth dorsal and lower lumbar vertebræ were sawn through and the intervening portion of the spinal column with the posterior third of the lower five ribs was removed and a careful dissection made. The soft parts around the body of the twelfth dorsal vertebra were considerably infiltrated with blood and inflammatory products. The twelfth thoracic ganglia of the sympathetic nerve, one of which lies on either side of the body of the vertebra, were surrounded by bloody infiltration and inflammatory products. The ganglia themselves were discolored, softer than normal, and apparently partially or completely disorganized. It was impossible to dissect out the ganglia owing to the infiltration of the parts and to their disorganized condition, hence they could not be obtained for microscopic examination. On further dissection it was found that the anterior portion of the body of the twelfth dorsal vertebra was crushed and a horizontal fracture extended through the entire body of the vertebra, and allowed the bodies of the eleventh dorsal and first lumbar vertebræ to approach anteriorly within half an inch of each other. There was also a backward subluxation of the upper portion of the twelfth costal vertebra, exposing the two superior articular processes of the vertebra, which projected backward nearly half an inch further than the inferior articular processes of the eleventh costal vertebra. As well as could be determined, the ligamentum subflava, the supra-spinous, inter-spinous, and capsular ligaments between the eleventh and twelfth costal vertebræ were ruptured. The ends of the spinous processes of these two vertebræ were separated a distance of about two inches from each other, causing a sharp curve in the spinal canal. The size of the spinal canal was further lessened by the projection backward of the upper and posterior portion of the body of the twelfth costal vertebra. The spinal cord was stretched and flattened from before backward by the angular curvature of the spine and by the fragment of bone projecting into the canal. Only a few drops of blood were found in the spinal canal. Neither the cord nor membranes seemed to be congested or inflamed. The spinal nerves were not compressed by the displaced or fractured bone. That the functions of the cord had been only temporarily affected by the accident, was substantiated by the symptoms. Had the patient survived the accident a few weeks or months, meningitis (local) and myelitis (transverse) would have been the inevitable results of compression and caries.

This is not the time or place for extended comments on the above case, which, so far as my information goes, is unique. I am not aware that any case has been previously recorded illustrating the spinal and sympathetic nerve-supply to the bowel in the region of the vermiform appendix and ileo-cecal valve. The twelfth pair of thoracic sympathetic ganglia receive fibers from the eleventh pair of dorsal nerves, and none from any other of the spinal nerves, if the illustrations in Gray's *Anatomy* are correct. In works on anatomy considerable is said about the distribution of the branches of the sympathetic nerve, but almost nothing, so far as the contents of the abdomen are concerned, in regard to the localization of the spinal and sympathetic nerve-supply of any viscus or portions of the hollow viscera. It is probable that irritation of the eleventh thoracic and first lumbar sympathetic ganglia, caused by infiltration of blood in the soft parts, was the cause of the contraction of the bowel immediately above and below the distended portion. The contraction was so great in the colon immediately following the seat of distention that it made this portion of the bowel appear like a piece of the small intestine.

That internal hemorrhage was the immediate cause of death I do not think there can be any doubt. The cause of the hemorrhage may not, in the opinion of some, be so easily accounted for. It seems to me that in the absence of any other apparent cause, the injury to the twelfth thoracic sympathetic ganglia (which contain both spinal and sympathetic fibers, the one supplying the muscular coats of the bowel and the other the bloodvessels,

glands, etc.), is sufficient to account for the muscular and vasomotor paralysis of the bowel; and probably the irritation set up by the presence of the cabbage and the general disturbance caused by the vomiting were all factors in producing the fatal and localized hemorrhage.

DIABETES MELLITUS GRAVIDARUM.[1]

By HENRY D. FRY, M.D.,
of Washington, D. C.

Gravidity increases the susceptibility of woman to certain diseases, and often changes the type of the malady by accentuating its dangers.

The physiological changes in the blood, in the secretions and excretions, and the nervous and physical alterations that occur in normal pregnancy, present new soil for the development and growth of pathological conditions.

The significance of changes in the urinary excretion is generally limited to considerations of the danger of convulsions. The presence of albumin and casts in urine, with low specific gravity and deficient elimination of solid ingredients, are the changes that warrant such a conclusion. Attention, at present, is claimed by the importance of different alterations: increased flow of urine, increased specific gravity, and the presence of sugar. Augmented flow of urine, with consequent low specific gravity, is considered a normal condition of pregnancy. The presence of sugar in small quantity was found by Blot to exist in one-half of all pregnant women. All nursing and lying-in women had glycosuria, and the proportion of sugar in the urine bore some relation to the activity of the mammary glands. When lactation ceased the sugar disappeared. Diabetes insipidus has been observed to occur during, and apparently dependent upon, pregnancy. Conjugal diabetes is described as a form of the disease affecting husband and wife simultaneously.

Physiological glycosuria and different forms of diabetes must not be confounded with diabetes mellitus gravidarum. Under the title "Puerperal Diabetes," Matthews Duncan reported several cases of his own and as many others as he was able to collect. The report comprises the histories of twenty-two pregnancies in fifteen women, and a study of these contributes mainly to the deductions formed in the present article.

The following case came under the observation of the writer:

The first pregnancy and labor were normal. Diabetes developed about the fifth month of the second pregnancy, followed by death of the child at the seventh month. Premature labor followed, and the mother died on the fifth day.

Mrs. P., thirty-one years of age, a secundipara, with good family history, gave birth to her first child after a normal pregnancy and labor. Subsequently her health remained good, but she was unable to nurse her baby, as the milk did not agree with it. In June, 1880, she became pregnant a second time. In the early part of October she first noticed that she was troubled with thirst, but attributed it to the warm weather. Frequent desire to pass urine next attracted her attention, and this symptom increased until the middle of October. She complained of being easily tired and had great difficulty in walking. In the latter part of October, and several times during November, she suffered from what were supposed to be bilious attacks.

The patient came under the writer's observation on November 18, 1880, complaining of severe headache, slight nausea, and constipation. A specimen of urine, that had been requested for examination, was sent on November 23. Seventy-four ounces had been passed in the twenty-four hours, with a specific gravity of 1045. There were no casts or albumin, but it contained 9 per cent. (nearly half a pound daily) of sugar. Dietetic and medicinal treatment were prescribed. After the latter part of November she was more easily tired, and expressed anxiety about her condition. She went out daily until the early part of December, but spent much of the day lying on the lounge. Dyspnea was complained of on slight exertion and was noticeable in talking. She also complained of a stuffed feeling in the ears and of nausea, which were relieved by the recumbent position. A bright, circumscribed spot was generally visible upon one or other cheek—usually the left. Her pulse was 120, appetite poor, skin dry, and mouth dry and sticky. The average daily excretion of urine and proportion of sugar contained, from November 24th to December 10th, inclusive, were ascertained to be as follows: urine, 79 ounces; sugar, 5 per cent. December 10th, emaciation and weakness increased and breathing more difficult. Weight seven pounds less than in August. December 11th, patient passed a miserable night, and her husband, being alarmed about her condition, sent for me at 9 A.M. I found the pulse rapid and feeble; the breathing short, and the speech jerky. The fetal heart-sounds could not be distinguished. Examination revealed the head presenting, cervix effaced, and os dilated as large as a silver dollar. Labor pains had not been felt. Her condition was so serious that an appointment was made to meet Dr. Busey at 2 o'clock in the afternoon to consider the advisability of emptying the uterus. At 11 o'clock an urgent summons was sent to return to the house, and on arrival I found the head of the infant born. The birth had been painless, and the only sign to attract attention to the fact that labor was progressing was the discharge of liquor amnii about an hour before its termination. The body of the child was delivered and the placenta readily extracted. The uterus contracted well, and very little blood was lost. The infant, a male, was small but well nourished. It had evidently been dead

[1] Abstract of paper read at meeting of American Gynecological Society, held in Washington, D. C., September 22–24, 1891.

for some days, as the epidermis peeled off easily. The mother was greatly prostrated; pulse 150, and feeble, and extremities cold. She was wrapped in blankets, hot applications applied, strophanthus and whiskey given by the mouth, and later, hypodermatic injections of whiskey and digitalis. An injection of morphine and atropine was also administered hypodermatically. The patient slept some, felt relief, but still complained of shortness of breath. At 2 o'clock Dr. Busey saw the case in consultation, and continued to meet and advise with me daily. Stimulants and warm applications were continued, and two and a half grains of extract of ergot in suppository were given every four hours. During the day the pulse was from 120 to 130, axillary temperature 98.2°, and surface cool. Thirst was a promiment symptom; the urine passed in large quantities; the breathing was less labored; the lochia normal; the mind dull, but when aroused, clear. On December 12th the symptoms were milder, and on the 13th the pulse was weaker, the temperature normal, the abdomen tympanitic. In the afternoon the mind was dull and one eye half opened in sleep. The mental condition was that of low typhoid. On December 14th the bowels were moved three times from the effect of calomel triturates. The abdomen was tympanitic. Milk diet was stopped and she was given animal broths and scraped raw beef. The mind became heavier; temperature 99.7; lochia normal. On December 15th the condition was worse; respirations were deep and labored, but not accelerated; eyes retracted; clonic contraction of muscles of chest and arms. At 10 A.M. she was unconscious, almost pulseless, and later in the day died.

FREQUENCY AND DIAGNOSIS.—Judged by the paucity of literature on the subject, we might infer that diabetes occurring during the child-bearing period is an extremely rare complication. We believe, however, that the disease is not so uncommon as it is unrecognized. It may develop during pregnancy, the latter exercising a causal influence, or pregnancy may occur in a woman already diabetic. That peculiar condition of a pregnant woman that is responsible for the development of the disease in one case is likely to be the factor in adding malignancy to a preëxisting mild attack in the other. In explanation of the presumable infrequency of the occurrence of pregnancy in diabetic women, it is asserted that the disease exercises a direct influence upon the female generative functions, producing diminution of sexual energy. Local diseases, inflammatory in character, are common in diabetic women and may lead to sterility. That the complication may occur more often than we are led to suppose, and be overlooked, is evident from the histories of the cases collected by Matthews Duncan. In the first case met with by that observer, the urine was not examined for sugar until after labor, although well-marked symptoms of diabetes were present and the patient's appearance created the gravest alarm. There were marked thirst and polyuria, but it was not until the day after labor that the urine was examined for sugar and its presence revealed the nature of the malady. Death occurred two days later. In many other reported cases the disease was unrecognized, and in some of them during repeated pregnancies, although well-defined symptoms pointed to the probable existence of glycosuria.

In W. L. Reid's case the symptoms of the disease were well marked during pregnancy, and after labor the thirst became so "frightful" that the woman crept on her hands and knees to the water-bottle. Two months afterward her emaciation and weakness led to the suspicion that she was suffering from diabetes. Examination showed that she was passing twenty-two ounces of sugar in the twenty-four hours.

DIAGNOSIS.—To aid in recognizing the affection, glycosuria should be suspected and the urine examined for sugar in all cases of pregnancy presenting obscure symptoms, weakness, emaciation, short breathing, etc. It is a good rule to suspect diabetes whenever a dead child is born without apparent cause. Syphilitic poison is no more certain to destroy fetal life than the diabetic condition. The subjective symptoms of the affection are of little diagnostic value, because they seldom attract the attention that their importance demands. When a woman is suffering from diabetes under other circumstances she consults a physician about her ill-health, but when occurring during pregnancy, the symptoms are made light of, attributed to other causes, or considered incidental to her condition. In my case the patient did not complain of any symptom that led to a suspicion of diabetes, although the disease had undoubtedly existed a month before she came under observation. The diuresis was attributed to the thirst, and the thirst to the warm weather. The importance of the symptoms in connection with her ill-health was not suspected.

In several of the reported cases, disturbance of vision led to the detection of glycosuria.

From the evidence that cases have been overlooked and others accidentally discovered, it is more than likely that diabetes occurring during pregnancy is often unrecognized. Some fatal cases are probably classed among deaths due to unaccountable causes, to shock, embolism, the entrance of air into the veins, etc.

Before taking up for consideration the effect of diabetes upon the pregnant, parturient, and puerperal woman, attention is again called to the influence of the child-bearing process upon the disease. When a predisposition exists to diabetes, pregnancy is liable to act as an exciting cause. It may develop in the beginning of gestation, or be deferred until later, usually about the period of quickening. When

preëxisting, the type of the malady is changed for the worse. The disease is less responsive to treatment than under other circumstances. If, however, it do not progress to a fatal termination before confinement, some hope may be entertained that a favorable change will take place at the end of pregnancy. Often the improvement is marked, and the disease seems held in abeyance until a succeeding pregnancy or some other cause starts it up with renewed activity. Cases are reported of disappearance of sugar from the urine after labor, and with it of diabetic symptoms. Some of the patients remained in good health, while others suffered relapses in a few months, or in subsequent pregnancies.

The aggravation of diabetes by pregnancy sometimes causes the disease to assume an acute form. In the case reported by myself, the duration of the disease, from the appearance of the symptoms to the fatal termination, was only ten weeks.

Other cases reported present well-defined attacks of the intermittent type. Authorities on the subject contest the existence of an intermittent diabetes, and attribute cases reported as such either to the result of malarial poisoning or to a benign type of diabetes, in which sugar disappears temporarily, and reappears on slight provocation. The case mentioned by Bennewitz is stated to be unique in this respect. Other cases of intermittent type are reported by Matthews Duncan, John Williams, and F. A. Packard, which confirm the statement that diabetes, occurring in the child-bearing woman, may assume an intermittent form, notwithstanding the admitted rarity of that type of the disease under other circumstances.

The Effect of Diabetes on Pregnancy, Labor and the Puerperium.—In studying this part of the subject one is immediately impressed with the pernicious influence exerted by the disease upon the function of child-bearing. Pregnancy is frequently interrupted by miscarriage or the premature birth of a dead child. The death of the fetus generally occurs at about the seventh month, but the fetus may not be expelled for one or two months afterward. Excessive development of the child is mentioned in a number of cases. It is impossible to state the exact proportion of pregnancies that end in miscarriage and premature labor, because of the incomplete information furnished in the reported cases. Seventeen women who were affected with diabetes at some time of their child-bearing period, gave a total number of seventy-nine pregnancies. The result was not mentioned in thirty-seven pregnancies. Of the remaining forty-two pregnancies only twenty (48 per cent.) terminated naturally. In two of these the children were feeble and died soon afterward; nine, or 21 per cent., of the pregnancies, ended in miscarriage, and thirteen, or 30 per cent., in premature death of the child. While demonstrating the harmful effect of diabetes upon pregnancy these figures do not represent the exact state of the case. Some of the pregnancies included in the above list occurred in women before they became diabetic; and, on the other hand, it is likely that the result, in most of the thirty-seven cases not mentioned, was normal.

Labor at term, in a diabetic woman, does not appear to deviate from the normal, except when influenced by the large size of the child and excessive quantity of liquor amnii.

Complications arising from a distended bladder are liable to occur during labor and the puerperium.

In cases that change for the better after confinement the symptoms improve in a few days. Sugar disappears from the urine (except the small amount considered physiological) after the first week—sometimes almost immediately. Cases recovering after labor should be carefully watched to prevent a relapse of the disease.

The symptoms after labor in severe cases of diabetes, especially when the child is dead, are those of exhaustion and threatened collapse. The pulse is feeble, and varies from 120 to 150, or more. The surface and extremities are cold. The temperature is normal or subnormal until the approach of the fatal termination, when it rises to 100° or 101°. The labored respiration is generally relieved after the birth of the child. The mental condition is generally blunted, the patient talks incoherently, and is restless. Death is generally preceded by coma for from a few hours to several days.

Prognosis.—The unfavorable prognosis of diabetes is accentuated by the coëxistence of pregnancy. Mild cases assume acute forms, and acute cases rapidly progress to a fatal termination. To this general statement exceptions are met, and cases remain mild and extend through repeated gestations. When the disease exists to an degree sufficient to cause the death of the child the gravest apprehension must be felt for the safety of the mother. Of ten such cases, nine died within eight months after labor, and only one survived with persistent diabetes. The birth of a healthy child at term, in a diabetic woman, indicates that the disease has not reached a critical stage. In such cases, therefore, a favorable prognosis may be given so far as immediate danger is concerned.

Intercurrent diseases during pregnancy or the puerperium possess additional gravity.

The great danger to the child's life has already been stated. Over half of the pregnancies ended in miscarriage or premature death of the child.

An important question now comes up for con-

sideration. Should a woman marry who is suffering from diabetes? From the evidence that has preceded the reply must be in the negative. The disease under favorable conditions, and with proper medicinal and dietetic treatment, holds out encouragement of a comfortable existence for several years at least. The intervention of pregnancy would remove any favorable conditions that were present, and jeopardize the expectancy of a life that at best is none too good. It is even questionable if marriage be advisable in a woman who has a strong hereditary predisposition to diabetes.

TREATMENT.—The obstetrical treatment of this subject pertains to a consideration of the advisability of the induction of premature labor. The question is entirely a new one, and we have not sufficient knowledge at hand to decide it. In the milder cases of the disease, when there is reason to think that pregnancy will terminate naturally, interference is not justifiable. But when the symptoms are acute, rapid emaciation and exhaustion of the mother threatening the existence of the child, prompt action is demanded in the interest of both. The period at which the child usually succumbs is about the seventh month; labor must, therefore, be induced at the earliest period of viability.

SUPPLEMENTAL TREATMENT OF THE PARALYSIS OF ACUTE ANTERIOR POLIOMYELITIS.[1]

BY V. P. GIBNEY, M.D.,
OF NEW YORK.

THE frequency with which cases of paralysis dependent upon poliomyelitis apply at an orthopedic hospital for treatment suggests to me the propriety of presenting to the Fellows of the American Orthopedic Association a paper on the subject of acute anterior poliomyelitis.

With the pathology and the clinical history of the affection I have on the present occasion nothing to do. I have long since become acquainted with a point in the therapeutics of this affection, a point with which all my hearers are more or less familiar. It is this: A palsied muscle or a group of palsied muscles is often very much handicapped by contractured tendons or muscles on the opposite side of the limb. Because of these contractures local treatment is often inefficient. However efficient the galvanic or the faradic current or even massage may be, if the muscle is overstretched this efficiency is certainly minimized. Another point that has forced itself upon me is this: A palsied muscle or a group of palsied muscles responds better to local treatment after a period of rest, or, at least, after being retained for a long time in normal position. These points can be illustrated better, I think, by the narration of a few cases taken at random from my notes.

CASE I.—A girl, fourteen years of age, was admitted to the hospital on January 10, 1888. The diagnosis was paralytic talipes equinus. She gave the usual history—the fever came on when she was twenty-one months of age, followed on the next morning by paralysis. She had the usual out-patient treatment. At the time of her admission, then twelve years after the date of the paralysis, the heel of her right foot was raised several inches from the floor, the toes were hyper-extended, and she bore her weight on the distal extremity of the metatarsal bones. Any attempt at dorsi-flexion of the foot caused hyper-extension of the toes, the flexion of the foot being resisted by a shortened tendo Achillis. The calf measured 10½ inches, as against 14 for the opposite side. While there was no absolute paralysis of the perineal group, there was certainly paresis, with apparent paralysis of the anterior tibial group. Two days after admission the tendo Achillis was divided, and the foot immediately flexed to a right angle, the space between the severed ends of the tendon being about 1½ inches. A convex pad was placed over this space to avoid the pressure of the bandage, the foot and leg encased in plaster-of-Paris, which was not removed until eleven days after the operation. The deformity was then over-corrected; another plaster bandage was applied, and, on the 8th of February, a steel apparatus without any joint at the ankle was used for convalescence. This enabled us to afford the palsied group of muscles rest, and on the 9th of April the girl was able voluntarily to flex the foot beyond an angle of 90°.

CASE II.—A boy, eleven years of age, presented paralysis of the right lower extremity, with anterior tibial paralysis of the left side. He was six years of age when attacked with poliomyelitis, and for at least a year after the attack was unable to stand. He moved about on crutches; finally contractures appeared, and for a year or two it was very difficult for him to walk with crutches. There was very marked lordosis, and in the dorso-lumbar region a lateral curvature to the right side; he bore his weight on the left limb, the right limb being practically a dangling leg. The anterior tibial muscles on the right side were very nearly powerless, and the quadriceps femoris was weak. The thigh-flexors on the left side, as well as the leg-flexors, were very nearly completely palsied, although the boy was able to move the knee and hip-joints with the assistance of associate muscles. The thigh-flexors, including some of the deeper fascia, were shortened, and it was impossible to extend the thigh beyond an angle of about 135°. Under ether, on the 29th of September, an open incision was made just below the anterior superior spinous process, and pretty free division of the muscles and fascia made, until the limb could be brought down to an angle of about 160°. The tendo Achillis was divided, and the leg was put up in plaster-of-Paris. On October 30th, under ether, a still further correction of the de-

[1] Read at the meeting of the American Neurological Association held in Washington, September, 1891.

formity was made, this time by manual force. On the 14th of February, 1889, the boy was discharged, able to walk without crutches, but with the limb supported at the knee by apparatus. While no electrical tests were employed in this case, it was the general impression of the hospital staff, as well as of the patient's friends, that he had much better control of his muscles than before the operation.

Case III.—The following case got about the hospital the soubriquet of the "Kangaroo Case." He was a boy, eight and a half years of age, referred to me by a distinguished orthopedic surgeon, in order that I might give him a home. A good many physicians and surgeons still hold to the idea that the hospital is a kind of a home for incurables. This boy's case seemed so interesting to me that, on November 26, 1888, I gladly admitted him to the hospital, and placed him under treatment in the wards. He presented the following history: When eighteen months of age he had "pneumonia," which lasted a month. On recovery it was found that his legs and arms were paralyzed. The arms gradually recovered power, the left leg improved a little, the right not at all. Three or four years later, he had a second attack, so the mother reports, and another attack last winter. I found his body and upper extremities well developed. He was unable to stand; the lower limbs

Fig. 1.

Representing the appearance of the boy when brought to the hospital.

were almost devoid of muscular power; what muscles remained were small and attenuated. There was slight power to move the toes of the left foot, but no such ability on the right side. The right thigh could be extended to an angle of 145°, the left to 135°. He presented a form of club-foot known as calcaneus. The internal condyles of both femoræ were were quite prominent, and there was a marked degree of genu recurvatum. I have not transcribed the comparative measurements, because they are unimportant. Under ether, on the 18th December, 1888, I made a vertical incision, one and one-half inches in length, just below each anterior superior spinous process, and while an assistant attempted to extend the thighs I divided with a scalpel and scissors (using my fingers as probes) all muscles and fascia offering resistance. I found that I came quite down to the capsular ligaments. I made counter-openings behind the major trochanters, and for drainage inserted a small strip of iodoform gauze, closing the primary incisions with catgut. By this time I was enabled to extend the thighs to an angle of 180°, bringing them down parallel, and after putting on a full antiseptic dressing I applied a plaster-of-Paris bandage extending from the axilla to the balls of the feet. By the 18th of January, the incisions had entirely healed, and without any apparatus the limbs lay parallel in bed. I soon put on a pair of long springs, without joints at the knees, but with a limited joint, that is, a small range of motion at the ankles. These springs were attached to a pelvic band. With these springs and a pair of axillary crutches the boy was soon walking about, and his appearance is shown in the accompanying photograph. He remained in the hospital until September 5, 1889, when an examination was made prior to his discharge. There was no appreciable increase in the power of the muscles

Fig 2.

Appearance of the boy as he left the hospital.

of the right lower extremity. He could move the left leg and also the foot, as well as the toes. The psoas and iliacus had evidently gained power. He has reported from time to time in the out-patient department; he attended school, and from a condition of helplessness he has become quite helpful to himself. Instead of walking like a kangaroo, he walks like a human being.

Examined September 2, 1891, he was found able to get about with the braces extending only above the knee, and with crutches. He goes to school. His

limbs are in very good position. The left thigh is extensible to an angle of 180°, the right to about 170°.

CASE IV.—A very helpless girl, cursed with an excess of adipose tissue, and only eight years of age, was admitted to the hospital January 27, 1890. Her poliomyelitis came on at two and a half years of age. This was followed by paralysis of the neck, and of the upper and lower extremities. She recovered the use of her neck and upper extremities, but her lower limbs remained more or less palsied, and the ligaments about the knee-joints became relaxed, so that when she came under hospital treatment she was very unwieldy, and was only able to balance herself on crutches. The thigh-flexors were shortened, the knees were in recurvatum and valgum, the right foot presented calcaneo-valgus, and the left foot varus. As she lay on the table for examination there was very marked lordosis of the spine—that is, when extension of the thighs was attempted. With the thighs flexed, however, this lordosis was overcome. The limit of extension of the left thigh was 140°. The right knee could be extended to an angle of 150°, the left was hyper-extended; there was very little power of flexion or of extension of the legs. There was a moderate amount of power in abduction, none in adduction, and no power of rotation. These movements pertained to the thighs. The legs and feet presented more or less paralysis in certain groups. The details are omitted as not pertinent to our subject. Suffice it to say that on February 4th she was subjected to about the same operation as in the preceding case. The left hip was found to be easily disarticulated, so that it was necessary to retain the dressings and plaster longer than is ordinarily done. By the first of April she was in a pair of long springs (without any joint at the knee) and on a pair of axillary crutches. She was discharged on the 12th of May. Recently she reported, to have her apparatus put in order, and she was found to be much more self-helpful. The mother states that the girl gets about comparatively well.

CASE V.—In March, 1889, a merchant of St. Louis brought his daughter, seven years of age, to New York in the hope of getting some relief from a paralytic deformity that made the child quite helpless. She had not stood alone or walked since she was fifteen months of age. At that time she had an attack of poliomyelitis. I found a great loss of power in the external rotators of the right limb; indeed, the paralysis was about complete. The internal rotators were also weak. The extensors of the leg were palsied, although the tensor vaginæ femoris and the sartorius seemed sufficiently strong to enable her to hold the limb extended for a minute or two. The flexors were weak, though not completely palsied. The extensors and flexors of the feet were palsied. By making a strong effort she could barely flex the toes. The flexors, especially the tensor vaginæ femoris, were shortened, so that it was impossible to extend the thighs beyond an angle of about 135°. In the left limb the gluteals were practically absent, the external rotators very feeble. The head of the femur rolled out of the acetabulum with a thud; the flexors and adductors were especially strong and shortened, preventing extension beyond 135°. The extensors of the leg were palsied, the flexors good. The gastrocnemius was weak, but the girl could flex and extend the foot fairly well, although the limb was much atrophied. I advised an operation, and on the 24th of September, 1889, the shortened tissues were divided, the limbs brought down parallel with each other, and the deformity fully corrected. There was no reaction to speak of. Within a month she was fitted with apparatus and was soon in the upright posture, walking with the aid of crutches and splints. Soon after this she returned home and became quite active. I saw her on April 8, 1890, and made a careful observation of her condition. The thighs could be extended to fully 180°. The father gave me a report of her condition last November. She was still improving in the power of the ligaments.

CASE VI.—The most extraordinary case in the way of deformity was operated upon by me in October, 1890. It was that of a boy ten years of age, palsied when eighteen months old. The paralysis affected the muscles in the loin, right side, and both lower extremities. He had an enormous curve of the spinal column to the right. The right thigh was held flexed at an angle of nearly 90°, with the head of the bone resting on the dorsum ilii. The limb could be extended to an angle of 135°, though the muscles and tissues about the front of the hip were very short. The external hamstrings on this side were quite tense, not allowing extension of the leg beyond 130°. The tendo Achillis was short; the foot was in varus. On the left side the flexors of the thigh were shortened, but not to such an extent as those on the right side. The hamstrings were also shortened to a moderate degree; the tendo

FIG. 3.

Appearance before coming under treatment.

Achillis was shortened. The thighs were much atrophied. (See Fig. 3.) I made an examination in my office and sent the boy to the hospital for operation. The impression made on my mind as he walked up the avenue on his crutches, with his right limb flexed, abducted, and rotated outward, was very painful. I wondered to myself if anything could be done to put that boy in better shape. By dividing the shortened tissues, pulling the limbs down into the best possible position, at the same time correcting the lateral curvature by manual force, I was enabled to hold him in plaster-of-Paris for several weeks. Then he was fitted with apparatus, put on crutches, and the result has been most gratifying. He walks erect, his limbs are parallel, he is growing, and his spinal deformity, which seemed to me almost hopeless, has improved at least 50 per cent.

I am aware that these case are incomplete from a strictly scientific point of view. I would hesitate to present them to a neurologist without a record of the electrical examination, the actual power (as measured by the dynamometer) remaining in the different groups of muscles, and also a record of these two points subsequent to the operation. Many years ago I reported my cases in this way, but of late years I confess that my examinations electrically have not been so precise. All I advocate is the correction of deformity, the removal of tension from a weakened muscle, the replacement of the joint-surfaces in normal apposition, and the assistance generally given to a limb the muscles of which are weak and palsied. In a number of cases I have been fortunate enough to secure the assistance of a neurologist, I first supplementing his work, he subsequently supplementing mine.

This crude paper is presented to the members of this Association merely as a contribution to the management of a very difficult class of cases—cases before which the neurologica heart often recoils.

THE PRE-TUBERCULOUS CONDITION.[1]

By J. HILGARD TYNDALE, M.D.,
of New York.

Consumptives may be divided into three classes:

1. Those with infiltration caused by mechanical pressure—the result of fixed pleuritic adhesions on the one hand, and on the other of connective-tissue proliferation and contraction in the lung itself—so-called chronic peribronchitis.

2. Those with infiltration as a remnant of acute disease, or with tuberculosis as yet strictly *localized*, the bacillus having forced an entrance into non-resisting cells.

3. Those with more or less rapidly diffusing tuberculosis, *preceded* by a lowering of the general condition.

The first two start with *local* conditions at a time when there is a good, or a fair, general condition. The third class takes its starting-point from an *impaired general condition*, and it is of this I wish to speak.

I hold it as a maxim that *localized* tuberculosis does not of itself endanger life, so long as the general nutrition begets a *reasonable resisting power of the lung tissues*. Hence when the starting-point is an impoverished nutrition, we are dealing with the true pre-tuberculous condition.

My starting-point is, therefore, *general malaise*, as yet unaccompanied by any physical signs in the lungs, not even by modifications in rhythm or pitch of breathing. I will not dwell upon predisposition or acquisition any more than to say: Beginning with fetal life, colinization of the bacillus in early life is favored by:

1. Transmission with the ovum, kept in latent abeyance.

2. Inherent inability, in bodies built after the type of phthisical habitus, of the leucocytes to digest the bacillus tuberculosis.

Acquisition of the bacillus in later life is in the apparently healthy favored by:

1. Insufficiency in anatomical development of the thorax.

2. Insufficiency in physiological expansion, as *e.g.*, in the ossification of the cartilages. These two conditions of lessened mobility of the chest and a consequent stagnation of air, is shown in a tendency of the *upper* lobes to tubercular invasion.

3. Parts of lung being confined by pleuritic adhesions and thus affording facility for a prolonged lodgment of the bacilli—these receiving both board and lodging for a term sufficient for their development. This is especially true of the *lower* lobes.

From the above causal elements I now coin this general maxim: *Constructive or destructive metabolism is inherent in the person.*

Now as to the true pre-tuberculous condition, both in the constructives and the destructives, let me first clear my path of obstructions by excluding considerations of age, sex, or race; influences of previous general disease (typhoid fever); or of still present general trouble (syphilis, diabetes); also remnants of acute lung disease; suppurating wounds or other septic sources within the body; and cheesy glands in the neck or axilla,—as sources of *direct* infection. All these are centers of infection from demonstrable local sources.

Excluding thus all general and local disease enumerated above, we see our way clear to a conception of the true pre-tuberculous condition. We are consulted by a person that complains first and foremost

[1] Read before the American Climatological Association at Washington, D. C., September 25, 1891.

of *general malaise*. This general malaise is readily shown to be composed of partial failure of several or of all functions of the body; inability to exercise the motive power; muscular debility known as feeling "sawed-off in the legs;" sensation either more acute or dulled; sleep either fitful or too profound—always extremes; variable digestive capacity; superficial breathing; and last, but not least, a rapid heart-action. In other words, there is a falling off in the daily routine of eating, breathing, elasticity in walking, refreshing sleep, a buoyant mind, to which is added vague disturbances of sensation. As yet there is no elevation of temperature. This is the rough picture of the *general* condition—by inclusion, if I may so call it. By exclusion, you will now find *acute* diseases (typhoid fever, for example) absent; likewise *chronic* ones—of which diabetes may serve as an example.

Approaching the local condition we find that, *as yet*, inspection, auscultation, and percussion furnish no clue whatever, not only as to dry and moist râles, but even as to changes in the respiratory elements of quality, pitch, or even of rhythm. This leads us to our second maxim: All more than temporary departures from well-being, of which the patient has been conscious for weeks or perhaps even months, and which by careful diagnosis cannot be made to fit into the frame of a recognized trouble, acute or chronic, functional or organic, represent the true pre-tuberculous condition. Correct appreciation of the pre-tuberculous condition can only be reached by exclusion.

Nothing now remains except to sharply outline the exact sequence of events in the pre-tuberculous condition, and in order to make the picture as clear and as distinct as possible, I shall divide the events into stations. Please bear in mind that I aim to give, in a few words, the whole course of the pre-tuberculous disease from beginning to end, and desire this to be remembered: The first station is entirely made up of *subjective* symptoms, and represents the true pre-tuberculous condition. The second and third stations are made up of the same subjective malaise, *plus* the objective findings in the lungs—and these merge into well-known types of tuberculous invasion.

Station First (*subjective*). General malaise, not fitting into the frame of recognized acute or chronic disease—in this respect comparable to neurasthenia, which is also diagnosticated by exclusion. As stated above, "general malaise" is a falling off from the individual norm of eating, breathing, muscular power, refreshing sleep, buoyant mind, etc. This impaired *general* condition leads up to the *local* lesion, both subsequently uniting to bring about destruction.

Station Second. This consists in the above subjective symptoms *plus* the objective change in the character of the respiratory elements, but as yet without râles, either dry or moist. The general condition advances to noticeable loss of adipose tissue in some, or, in others, of red blood-corpuscles, up to the verge of pernicious anemia—or to both combined. The order of importance in respiratory changes is, in auscultation: quality, pitch, and rhythm. The changes now occurring are in the reverse order of their importance: rhythm first, then pitch, then quality. This is the main point I wish to emphasize. As to *rhythm:* Interrupted (cog-wheel) inspiration (a pause not existing in the norm), a prolonged and audible expiration. As to *pitch:* Higher than the original vesicular low pitch. This holds good of both auscultation and percussion, and is in accord with Dr. Leaming's great law: Low pitch denotes porosity, high pitch denotes density. As to *quality:* From vesicular to broncho-vesicular, and finally bronchial, or, as I prefer to call it, tubular.

Station Third. Dry, followed by moist râles and gurgles, according as the tuberculous invasion begets a localized or a widespread bronchiolitis or local excavation. The third station of pre-tuberculous patients is, therefore, either a direct rush into diffused tuberculosis (general bronchiolitis, or tuberculous pleurisy) in those of destructive metabolism; or, in those of constructive metabolism, a more gradual destruction by infiltration and excavation, perhaps with subsequent limitation.

In conclusion, I offer the following maxim: The pre-tuberculous condition is a tuberculous invasion as yet undemonstrable, engrafted upon those whose nutritive changes have brought them to a condition below par as compared with their usual physiological condition. This physiological unit is strictly and absolutely individual.

INHERITED SYPHILIS OF THE LARYNX.

BY S. G. DABNEY, M.D.,

CLINICAL LECTURER ON DISEASES OF THE EYE, EAR, AND THROAT, AT THE HOSPITAL OF THE COLLEGE OF MEDICINE; VISITING SURGEON TO EYE, EAR, AND THROAT DEPARTMENT, LOUISVILLE CITY HOSPITAL, LOUISVILLE, KY.

THOUGH much has been written on the subject of laryngeal disease due to acquired syphilis, we find in the text-books but little descriptive of the inherited form of syphilis manifesting itself in the larynx. Thus Mackenzie says: "Hereditary syphilis (of the larynx) is occasionally met with in children, though I have never seen a case in a child younger than seven years. In each of the five examples I have met with there was ulceration of the edge of the epiglottis, with exposure of the cartilage." Lennox Browne is of the opinion that "as a rule the ulceration of congenital syphilis is limited to the palato-pharyngeal and naso-pharyngeal tissues,

and that laryngeal mischief is a comparatively rare sequel." The following cases, therefore, seem worthy of report as illustrating hereditary syphilis of the larynx, and perhaps as possessing some points of interest in themselves:

Case I.—Miss B., aged sixteen, consulted me in November, 1890. The medical history given by her mother was as follows: The patient was the oldest of five children, all of whom had been fairly healthy. In November, 1889, she had diphtheria, several other children in the neighborhood being affected at the same time. For this she was attended by my friend Dr. A., who corroborates this part of her story. After recovery her throat remained weak, and in the spring of 1890 it gradually became much worse. From that time until her visit to me her symptoms had gradually increased in intensity, although she had during this time been treated by three physicians.

On examination I found the patient to be marked by the doughy skin, facial cicatrices, and peg-shaped, notched, upper incisor teeth, described by Jonathan Hutchinson. Her voice was so rough and hoarse and low, that it was difficult to understand what she said. She suffered no pain, but had great discomfort in swallowing, and even in speaking. Her mother said that her breathing when asleep was noisy and difficult. Examination of the nose showed only some hypertrophy over the turbinated bones. The uvula was long and club-shaped, and quite deeply ulcerated on its lower posterior surface. The laryngoscope showed the epiglottis to be eaten away in perhaps one-fourth of its extent, the ulceration having proceeded from the edge. What remained was much thickened and of nodular surface, somewhat resembling lupus. The ary-epiglottic folds were also thickened, and on and above the ventricular band of each side was deep ulceration. It was impossible at this time to see the cords.

The diagnosis lay between tuberculosis and syphilis, acquired or inherited. Careful examination gave no evidence in favor of phthisis, and absolutely no history in any way suggestive of acquired syphilis could be obtained. The age and social standing of the patient, and the character of the lesions, which could only be tertiary if acquired syphilis produced them, made this supposition altogether unlikely, though of course not impossible. I was thus led to regard the case as one of inherited syphilis attacking that part whose power of resistance had been lately lessened by diphtheria. This tendency of hereditary disease to invade a weakened organ is well known.

Dr. Adolf Bronner, at a meeting of the British Ophthalmological Society, lately called attention to the appearance of congenital syphilis in injured eyes. In the case just related rapid improvement took place under the daily administration of sixty grains of iodide of potash and one-sixth grain bichloride of mercury, together with the use of detergent sprays and nitrate of silver locally.

Case II.—Miss B., aged seventeen. Her father and mother died when she was five years old. Their medical history is unknown. She has one brother, two years her senior, and reported healthy. Miss B. became almost absolutely deaf at fourteen years of age, the deafness being permanent, unattended by pain, and attaining its maximum in about three months. At the same time she suffered from diffuse inflammation of each cornea, whose traces as well-marked opacities are still visible. She came to see me on account of her throat. I found a long perforation in the anterior faucial pillar of the right side, deep and ragged ulceration of the pharynx, and one large irregular ulcer on the right ventricular band of the larynx. Here the diagnosis was unmistakable. Appropriate treatment was followed by speedy improvement.

CLINICAL MEMORANDA.

CASE OF COMPARATIVELY LATENT AND QUICKLY ENDING DIABETES AFTER INFLUENZA.

By M. MAGELSON, A.M., M.D.,
of Fergus Falls, Minn.

Mr. K. F. L., a farmer, thirty-three years old, sought my advice on the 26th of June, saying that he had previously enjoyed good health; until the beginning of last April he had pains in the back of his head, with sneezing, soreness of the eyes, lancinating pains in the arms and legs, fever and a feeling of general weakness. In fourteen days this attack left him, and he was then very weak, had considerable cough, lost his appetite and ran down in flesh. He spat some blood one week in May, and sought medical advice on account of his lungs. He grew weaker, the cough got more and more annoying, and he raised more and more of a thick greenish expectoration. In the middle of May he had some night-sweats. Examination showed a chronic bronchitis in both lungs. He complained of weakness, loss of appetite and a steady cough that disturbed his sleep. His tongue was markedly dry, and this, as well as the upper part of his throat, had a glazed appearance. He was not very thirsty, and did not pass his water frequently, and it is especially to be noted that he did not have to pass it in the night. There were no symptoms of itching or impairment of sight, no odor from his skin or breath, and no sweating. His bowels moved regularly every day. His urine was clear in color, reddish yellow, and had a specific gravity of 1042. The amount passed in twenty-four hours was 1760 c.c. By approximate valuation of the amount of Fehling's test solution, the percentage of sugar was estimated as between 20 and 25 per cent. As the amount seemed to me to be extraordinary, two drops of the urine were evaporated at common summer temperature upon an ordinary glass slide, and photographs made of the sugar deposit in each drop magnified 22.5 diameters. I will remark that the height of the deposit was fully proportioned to the extension. He stayed a week under a treatment of opium and Carlsbad Sprudelwasser. The cough stopped and he slept well, but there was no lessening of the amount of sugar in the urine. On the 30th of June he went home to Dakota, about seventy miles

from me, as I had told him that I thought his disease was incurable. On the 3d of July he died. From the description that his wife gave me in a letter, I think he died in diabetic coma. The case is interesting from the facts of its short duration, its comparative want of symptoms, and as a direct result of a rather moderate attack of influenza. Because I did not have sufficient time to make exact and repeated quantitative analysis of the amount of sugar, I will not discuss the amount but only say that I was convinced that it was surely 25 per cent.—larger, indeed, than in that of any other case that I have seen reported.

STEEL IN THE IRIS FOR TWENTY-SEVEN YEARS.

BY F. C. HEATH, A.M., M.D.,
OCULIST TO ST. ELIZABETH'S HOSPITAL, LAFAYETTE, IND.

SOME time in 1864, Mr. P. E. H. was engaged in reaming a tire on a locomotive engine, when a small piece of steel, about two mm. long, from the reamer, penetrated the cornea of his right eye, lodging in the iris, about midway between the pupil and the outer margin. In about four weeks the "irritation" fully subsided. It gave no further trouble until five years ago, when inflammation arose, as he thought, from irritation of the eye by gravel. This quieted down after a week's treatment by Dr. J. L. Thompson, of Indianapolis.

The patient came to me in June last with a well-marked iritis that had started five days before. He again made a good recovery, under two weeks' treatment with atropine, leeching, etc., and the eye has been free from pain, ciliary injection, or other symptoms of iritis ever since. The vision is unaffected.

It is exceptional for a foreign body to remain so long in the iris and produce so little trouble. Noyes mentions a similar case of *nineteen* years' duration, but this is *twenty-seven*.

BLACK STAINING OF DIAPERS FROM THE USE OF SALOL.

BY S. RUSH KETCHAM, M.D.,
OF PHILADELPHIA.

IT has been my custom to use salol considerably in diarrheal diseases of children, and in the case of a child six months of age I used two-grain doses three times daily. In about forty-eight hours the mother was greatly excited, and told me her child was passing blood in the urine. I immediately called for the diapers, and finding numerous stains of a dark-pink and black color, I concluded that they positively were not blood-stains, but that they were produced by carbolic acid, as salol is chemically a salicylate of phenol. No other symptoms were present, and, after ceasing its administration, the staining of the diapers disappeared in twenty-four hours.

MEDICAL PROGRESS.

Esophagotomy.—KRÖNLEIN (*Corresp.-bl. für Schweizer Aerzte*, August 15, 1891) presented to the Society of Physicians of Zurich the case of a man, fifty years old, who swallowed a bone, which became impacted in the esophagus. Subsequently the stools were bloody and the man became anemic. Attempts to remove the obstruction failed. Twelve days after the accident, esophagotomy was performed. The only complication encountered was hemorrhage from the eroded superior thyroid artery, which was readily controlled. The sharp-cornered foreign body was removed. The wound of the operation healed satisfactorily, but exhausting hemorrhages took place. Nevertheless, complete recovery ensued in the course of six weeks, the patient, however, being still anemic. Krönlein took occasion to state that he had already performed esophagotomy for foreign bodies in four cases.

Traumatic Communication of Carotid Artery and Cavernous Sinus.—WHERRY (*Lancet*, August 29, 1891) reports the case of a lad, thirteen years old, who, after a traumatism, presented the symptoms of concussion of the brain. Double ptosis, with dilatation of the pupils, developed. Three weeks after the injury, the boy was seized with tetanic spasm of the head and neck. On the day following, the eyelids were edematous, with proptosis of the left eye. Under energetic treatment some improvement took place. At the end of another three weeks there occurred an attack of severe pain in the left orbit, with increased proptosis. An incision disclosed an extravasation of blood in the cellular tissue of the left upper lid, with distinct pulsation. On auscultation of the forehead, a loud bruit was detected. The sound was continuous, but was reinforced with the pulse, and could be obliterated by compression of the left carotid artery. On ophthalmoscopic examination, evidences of double optic neuritis were found. It was held that the base of the skull had been fractured and a communication established between the carotid artery and the cavernous sinus. A certain degree of improvement took place, but ultimately it was determined to ligate the left common carotid artery. This was accordingly done. The bruit at once ceased, but alarming symptoms developed. For a month there was coma, with dysphagia, incontinence of urine and feces, paralysis and rigidity, but recovery ultimately took place.

Gumma of the Retina.—LEWIN (*Berl. klin. Wochenschrift*, July 13, 1891) presented to the Dermatological Society of Berlin the case of a man twenty-six years old, in which, thirty days following infection and two weeks after the development of a chancre, an echthymatous eruption, drying into black crusts, appeared all over the body and face. At the same time retinitis pigmentosa was detected, as well as a bean-sized prominence in the lower left quadrant of the retina, which it was concluded was a gumma. Obstinate at first, the condition gradually yielded to subcutaneous injections of iodide of mercury.

Treatment of Hyperidrosis.—In the *Revue Général de Clinique et de Thérapeutique*, the following prescription for sweating of the hands and feet is given. The application is to be made night and morning. The part is first washed with hot water and immediately afterward the following ointment is applied:

℞.—Ichthyol . . . . . 1 ounce.
Vaselin . . . . . 1½ ounces.

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SATURDAY, OCTOBER 10, 1891.

THE THERAPEUTIC VALUE OF HYPNOTISM.

Several important books upon Hypnotism have appeared during the current year in France and Germany, and the question of its therapeutic value cannot be considered as settled. All, however, agree that the method has great dangers if its unrestricted practice be allowed, and that the eye of the law must be kept sharply on the watch to guard against easy abuse and invited danger. Preyer's book (*Der Hypnotismus*, etc.) of 217 pages accepts almost none of the modern additions and claims; it rests essentially upon the development of the "science" as given by the older masters, Braid, Heidenheim, Charcot, etc. Bernheim's 500-page octavo (*Hypnotisme, Suggestion, Psycho-thérapie : études nouvelles*) is the completest and latest exposition of the leader of the Nancy school. The volume is largely devoted to the clinical histories of cases in which, according to the author, hypnotic suggestion has been able to effect cures in a multitude of cases of multiform nervous disease. Wetterstrand of Stockholm (*Der Hypnotismus und seine Anwendung in der praktischen Medicin*, 122 pages), is also an enthusiastic believer in the power of suggestion to cure disease. He has had an immense clinical experience—over 3000 cases. He describes in detail and with perfect sincerity the histories of cures of rheumatic disease, epilepsy, morphinomania, and many other types. Ringier's volume of 200 pages has a double interest, in that the author is a country practitioner and that he is a conscientious and earnest character, carefully trying to get at the truth of the value of suggestion-therapeutics. He subjects his 210 cases to careful scrutiny and gives as close an analysis of his failures as of his successes. He divides his cases into seven groups: 1. Those neuroses pertaining to the motor, vasomotor, or secretory systems; 2. Neuroses of the emotions, or neuralgias; 3. Insomnia; 4. General cerebral neuroses or psychoses; 5. Rheumatic affections; 6. Intoxications; 7. Sundry affections. Liebeault's *Thérapeutique Suggestive* (300 pages) will have especial interest for students of animal magnetism. He frankly confesses that his former experiments of this kind upon children have proved mere illustrations of suggestion-hypnotism. There is also a free confession of many injuries to patients committed by him in hypnotic experiments.

Those interested in the question of the influence of drugs upon the suggestibility of the patient, especially its increase by cannabis, may consult Schrenk-Notzing's *Die Bedeutung narcotischer Mitteln für den Hypnotismus*. The psychological aspects of hypnotism are especially treated in Janet's *l'Automatisme psychologique* and Dessoir's *Experiment. Pathopsychologie* (*Vierteljahrsschrift für wissensch. Philos.*, Jan. 15, 1891).

A thoughtful and conservative practitioner, Dr. Eskridge, delivered an excellent address upon this subject before the Colorado State Medical Society, which is published in the *New York Medical Journal*, August 1, 1891. The whole subject is reviewed in the light of a not inconsiderable personal experience. The value of hypnotism as a therapeutic agent is found to depend upon mental impression and the permanency of the same. No mysterious influence other than this is exerted over the subject, and the state of hypnosis, so far as the physician is concerned, is simply a condition of greater sensibility to impressions. Indeed, repeated impression without the abnormal suggestibility of hypnosis is often quite as effective. Dr. Eskridge rightly emphasizes the dangers of hypnotic practice in the hands of the ignorant or incompetent, and strongly urges the legal restriction of licenses to physicians and scientific investigators.

It remains an open question whether the unpre-

ventable dangers of hypnotic practice will be found to outweigh the therapeutic use and value. The domination of a weak will by a strong one, the control of attention either by another's or by one's own will, the direction of emotion by effort and resolve—these are the commonest facts of every-day life. It would seem that much of the philosophy and mystery of hypnotism come down to this simple explanation: viz., that it consists in renunciation of self-control and in heightening and emphasizing the power of the attention, and in fixing the will-less mind in determinative control of in-coming sensation and out-going innervation. When the attention is absorbed by one thought or act or sensation, others that come to the consciousness are unnoticed. Again, when the will is absorbed in one act, another may be carried out without consciousness. These are normal, every-day facts; hypnosis simply morbidizes the condition. It is usually only diseased and weathercock wills that the breezes of external suggestion can blow hither and thither, and though such wills are sad enough and common enough facts, the ideal of true character must consist in self-control and autocracy. Consequently the physician that uses hypnotic suggestion or plain common-sense advice and encouragement, must do it with the distinct object of righting the diseased will and strengthening it in self-control. It can hardly be doubted that the hypnotizing therapeutists have often been more occupied with the psychology than with the cure, and that the education of the patient's self-control has not always been a primary object. Hysterical condition has been produced in order to cure hysteria, and neurosis *b* has replaced neurosis *a*. If human vivisection, practised with the clearest and most earnest desire to thereby further human weal, is squarely criminal, it may be conceded that to play and juggle with the profoundest mysteries of neurological and psychic life is the most wanton cruelty. About the inter-relations of will and sensation, mind and body, consciousness and nerve-centers, we know quite as much as a Hottentot savage would know about the use of the instruments at the Lick Observatory. The tricks of the hypnotist with the enslaved consciousness remind one of what the savage might do among the telescopes. We must have a better psychology and an infinitely more perfect pathology and pathogeny of psychic disease, before we shall be capable of intelligent use of hypnotic control and suggestion as justifiable methods of cure. Let us make haste very, very slowly.

EMPLOYMENT OF INSANE IN THE EASTERN MICHICAN ASYLUM AT PONTIAC.

IT gives us pleasure to excerpt the following from the biennial report of the Medical Superintendent of this institution:

"The policy long ago inaugurated and carried into execution in respect to employment of patients has been continued and extended on certain lines. In addition to the employment of male patients in the care of stock, upon the farm, in the shops, and in working-parties of the more trustworthy, under the direction of an out-door attendant, the plan has been adopted of sending out, in rotation, parties from each of the 'disturbed' halls in the male department, once a week in the summer season, to do odd tasks of weeding, raking, grading, wheeling cinders, road-making, and similar light work. This exercise has taken the place of the purposeless walk, and has been found to operate favorably in promoting the quiet and comfort of the halls and the welfare of patients as well as beautifying and adorning the Asylum premises. Under this system it is practicable to give employment to nearly all male patients who are physically able to undertake work out of doors. The enlargement of the kitchen has afforded additional room for the employment of patients in this department, and the increased numbers under treatment have rendered it necessary that this help should be supplied to the kitchen. For female patients an ironing-room has been fitted up at the laundry, and parties from the different halls assist regularly in ironing. The substitution of gas heaters for the large stove formerly in use for heating flats, has economized the time of employés and patients, and has rendered the accomplishment of laundry work less difficult. It has been found practicable also to employ in connection with the wash-room in the laundry several female patients of vigorous constitution.

"These additional opportunities for employing patients have been of the utmost value in treatment, and their importance cannot well be over-estimated. It is contemplated during the coming biennial period to introduce broom- and brush-making, and thereby furnish in-door employment to certain male patients in unpleasant weather.

"On the day that this is written, there are actually employed out of doors and in different outside departments of the Institution 248, out of a total of 518, male patients, and this is in addition to those regularly employed in in-door occupations and hall work."

AN ERA OF PREVENTIVE MEDICINE.

THE world is progressing. It is not sufficient to be provided with remedies for correcting existing

evils; the demand of the hour is for means that will prevent their occurrence. As our knowledge of disease grows, not only are we better fortified to combat it, but we are also placed in a position in which we can obviate its development or extension. It is especially the etiology of disease from which we can hope to learn the prophylaxis. An era of preventive medicine has set in—not with any abruptness, it is true, for the prophylaxis of disease is as old as medical practice itself, of which it forms but a part; but the subjects of hygiene and sanitation and vital statistics have become matters of popular education.

As we learn more of disease, and as the superstitions surrounding it and its therapeutics are dispelled, the conviction becomes stronger that with some notable exceptions we can do little to overcome the disease-process. The most we can hope for is to assist and encourage Nature in her efforts to bring about recovery, removing complications and meeting emergencies as they arise. It thus becomes quite as important to know when to abstain as when to interfere.

What has been said in the foregoing is borne out by the proceedings of the Seventh International Congress of Hygiene and Demography recently held at London. The meeting occupied an entire week, was patronized by the highest authorities of England, and was participated in by some of the most brilliant minds, both lay and medical, of many countries. A glance at the work of the Congress, but a brief summary of which we have been able to present, will show how far-reaching were the subjects discussed, of which a pleasing feature is that they deal not only with disease and causes of disease, but with the relations of these and of environment and occupation to individuals and to communities. They enter into the very lives of the people. The hope is justified that much good may result from the deliberations of a body so strong, both intellectually and politically, as was this last Congress. While there may be a want of unanimity of opinion as to the immediate causes of disease, there is less diversity as to the general measures to be adopted to prevent its spread.

THE QUACK AND THE POSTMASTER.

We have received copies of circulars presumably sent to all the postmasters of this country, in which extraordinary inducements are offered them in order to secure, by their aid, lists of persons that receive their mail at a specified office. The lists are to be of two kinds: all those not invalids, and those that are suffering from any chronic ailment. The postmaster is especially instructed to give "the names of persons suffering from rupture (breach), for which we possess a new and radical means of cure; also, those suffering from piles, or from fistula-in-ano, for both of which diseases we have new, improved, and radical methods of treatment, or of those afflicted with diseases of the throat and chest; or of the digestive organs, heart diseases, diseases peculiar to women, scrofulous diseases, as fever-sores, white swellings, and old sores or ulcers; also, the names of any sufferers from diseases of the urinary organs, as diabetes, Bright's disease, gravel, inflammation of the bladder, stone in the bladder, strictures, and kindred affections; or from epilepsy, or fits, chorea or St. Vitus's dance, paralysis, curvature of the spine, nervous debility, or from tumors, or any other chronic diseases, for all of which our Institution offers special advantages and facilities for treatment. Please to be particular to indicate opposite every name, 'in the Invalids' division of the list,' the disease (if known to you) with which the party [*sic!*] is supposed to be afflicted."

Upon the receipt of the list the presumption is that the people will be deluged with testimonials and promises to cure, from the proprietors of the "Cosmic Dispensary and World's Therapeutic Institute."

The only law or ruling pertaining to this abuse of the United States Postoffice for the purpose of preying upon the gullible, is contained in the following Postoffice order: "Complaints having been made to this Department that the names of persons within the delivery of postoffices are frequently furnished by postmasters upon the application of parties desiring to mail to the addresses so furnished improper matter, covering, in many cases, indelicate advertisements or cunningly devised schemes to defraud, postmasters are hereby forbidden, in any case, to furnish such lists, until they are satisfied the parties making the application will not use the names for improper purposes, and reasonable assurance has been given that such lists will not be offered for sale or transfer."

It would appear that this lax instruction is not by any means sufficiently explicit and inhibitory. The execrable business should not be thus even indirectly aided by the General Government. The physicians of each village and town should see that the postmaster does not thus disgrace his office.

EDITORIAL INDEPENDENCE.

WE trust that no reader of THE NEWS will fail to reflect upon the striking condition of medical journalism, at least in one instance, illustrated by the incident related in DR. DILLER'S letter, published in another column of the current issue of THE NEWS. It remains wholly within the power of the conscientious physicians of this country to determine whether their professional journals shall be solely devoted to unbiassed medical truth and science, or whether these journals shall be the hypocritical mouthpieces of concealed control or of financial scheming. What a shame that the editor in question did not at once resign rather than write that second letter!

SOCIETY PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, held at Washington, September 22, 23, and 24, 1891.

FIRST DAY—SEPTEMBER 22D.

DR. WHARTON SINKLER, of Philadelphia, delivered the President's Address. He recommended that an effort be made each year to obtain papers from some of the foreign honorary and associate members. He announced that since the preceding annual meeting twelve books and one hundred and seventy-seven papers had been published by Fellows of the Association.

Dr. Sinkler reported "A Case of Acute Spinal Paralysis; Death on the Twelfth Day; Autopsy Showing Transverse Cervical Myelitis, with a Report of the Microscopical Examination by Dr. C. W. Burr." The full text of the paper is to appear in a subsequent number of THE MEDICAL NEWS.

DR. W. C. KRAUSS, of Buffalo, read a paper on "Poliomyelitis Acuta Adultorum," in which he reported a case in a man, forty-three years of age, previously strong and healthy and with a good antecedent history. Two of the grandparents had severe attacks of measles between thirty-five and forty years of age. The father also had a severe attack of measles at thirty-four. Some members of the family displayed evidences of insanity. The patient had a severe attack of measles when thirty-eight, from which he failed to recover perfectly. At forty he was seized with fever and pain in the neck, extending down the spine. Subsequently paralysis of the trunk and extremities developed, without apparent sensory disturbance. Some improvement took place in the course of the subsequent three or four weeks. Nine months after the onset of the attack, however, the four extremities were still palsied, with atrophy, cyanosis, and edema, and with loss of faradic irritability. The reflexes were wanting; some power in the back had been regained. Dr. Krauss was unwilling to admit that the attack of measles was sufficient to precipitate a profound spinal lesion, but believed that when a neuropathic or psychopathic heredity existed, any infectious disease may induce derangement of the nervous system. In the case reported, little or no improvement followed the subsidence of the general symptoms.

DR. CHARLES K. MILLS, of Philadelphia, stated that the association of poliomyelitis and multiple neuritis is comparatively common. He related a case occurring in a child, seven years of age, in which an attack of diphtheria was followed by peripheral pains and paralysis of a group of muscles in one leg. The question of infectious diseases causing multiple neuritis in association with poliomyelitis is an interesting one. Such a result is more likely to be brought about by various toxic agents. In one case under the observation of Dr. Mills the paralysis was general, but recovery took place. There was probably an association of both lesions. Years ago Dr. Mills had directed attention to this concurrence, particularly in arsenical poisoning.

DR. ROBERT T. EDES, of Washington, thought that this concurrence might also result from the action of alcohol.

DR. G. L. WALTON, of Boston, referred to a case of multiple neuritis dependent upon lead-poisoning, with atrophy, ataxia, etc., in which death took place after spinal symptoms and cystitis. Owing to their coexistence, absolute differentiation of spinal and periphera lesions is sometimes unnecessary.

DR. C. L. DANA, of New York, stated that in all cases of acute or subacute neuritis from alcohol, rheumatism, etc., the lesion is confined almost exclusively to the peripheral nerves. He has numerous specimens to substantiate this view, in connection with the clinical histories. The condition in chronic neuritis is not so certain.

DR. G. L. WALTON, of Boston, reported "A Typical Case of Thomsen's Disease." W. C., twenty-nine years old, a printer, had suffered since boyhood from difficulty in using his muscles after a period of rest. As a child he was clumsy, and often stumbled. The trouble reached its maximum at fifteen, and has since remained stationary. Practically, all the muscles are affected, including those of the eyelids and of deglutition. The patient starts with a slow, waddling gait, but soon walks rapidly and without fatigue. Strength is preserved and the muscles are very large (according to a photograph shown). A moderate faradic current develops tonus. No other member of the family is affected in this way, but the father is said, during early manhood, to have presented a mild degree of a similar disorder. The differential features between this affection and the congenital paramyotonia of Eulenburg were shown by a case of the latter affection in a man of sixty-seven years, characterized by tonic spasm and weakness, lasting for from fifteen to thirty minutes, brought on by exercise and disappearing after several recurrences, when the exercise was continued. The affection had been observed from infancy. A brother and daughter of the patient suffered from the same disorder.

The two diseases are analogous, each depending upon a congenital defect in the muscular apparatus, perhaps also in the central nervous system, the difference consisting in the mode of onset of the increased muscular irritability.

DR. C. H. HUGHES, of St. Louis, maintained that

Thomsen's disease is an affection of the muscular system, and doubted the entity of the disorder, considering it symptomatic.

Dr. Philip Coombs Knapp, of Boston, read a paper on "Astasia-Abasia," which he defined, after Blocq, as a morbid state in which the impossibility of standing erect and walking normally is in contrast with the integrity of sensibility, of the muscular strength, and of the coördination of the other movements of the lower extremities. Dr. Knapp had collected forty-nine cases from various sources, and reported a case under his own observation. The patient was a male, fifty-eight years of age. When recumbent, movements were fairly vigorous. Sudden spasm, with rigidity of the extremities, occurred. Subsequently retropulsion, difficulty in articulation, and involuntary movements developed. Tonic treatment was inefficacious. The best results have been obtained by moral treatment and the substitution of volitional for automatic movements. The condition cannot be considered a morbid entity, but a complex of symptoms.

Dr. G. M. Hammond, of New York, maintained that the affection is not organic, because the movements of walking could be performed when the patient was recumbent. He considers the affection a manifestation of hysteria. He had found bicycle-riding a most useful remedy.

Dr. C. L. Dana, of New York, corroborated Dr. Knapp's suspicion of the case as one of paralysis agitans. He had a patient presenting astasia-abasia, with manifest paralysis agitans.

Second Day—September 23d.

Dr. Morton Prince, of Boston, read a paper on "The Pathology of Hysterical Anesthesia," illustrated by two cases showing some unusual phenomena. In the cases demonstrated, notwithstanding the existence of deep anesthesia, impressions upon the hand were felt. Pinching and pricking were not recognized. When the subjects were hypnotized, they accurately described the tests that had been applied to the anesthetic parts, of which they had not been conscious. The impression was thus felt, but not perceived. The most probable explanation is that the middle sensory centers of Hughlings Jackson were normal, but that the highest centers, in which impressions are coördinated with the other psychic states constituting consciousness, were inhibited.

A paper on "A Case of Tumor of the Cerebellum, in which Trephining was Done for the Relief of Pressure," by Dr. Philip Coombs Knapp and Dr. E. H. Bradford, of Boston, was read. The report was of a man, twenty-eight years old, with a negative family history, who had poliomyelitis when seven months old. When twenty-six, severe right occipital headache developed, with diplopia, impairment of vision, double optic neuritis, convulsive attacks and nausea and vomiting. Ultimately vision was entirely lost, as well as the sense of smell. Large doses of iodides accomplished no improvement. Hearing was lost; difficulty in deglutition and in articulation developed. The mental condition remained unaltered. A trephining operation in the right temporal region over the Sylvian fissure was followed by relief of the pain. Hernia cerebri developed and death took place two months after the operation. At the autopsy a tuberculoma was found in the left lobe of the cerebellum.

A paper, entitled "A Case of Trephining and Excision of the Cortex for Jacksonian Epilepsy," by Dr. W. W. Keen and Dr. Charles K. Mills, of Philadelphia, was next read. The case reported occurred in an adult who, ten years previously, presented left hemi-paresthesia, to which, five years later, left hemi-spasm, without loss of consciousness, was added.

Dr. Keen trephined over the motor cortex and removed the centers for the shoulder and the upper arm. There were found thickening and sclerosis of the bone and a small growth over the dura, which, upon microscopical examination, proved to be a sarcoma. Three days after the operation, there was paralysis of the arm and leg, but by the thirtieth day power had completely returned. No sensory symptoms developed. During eight weeks after the operation convulsions occurred, but they were of milder character than they had been. Eventually further improvement took place.

A paper on "Porencephalus, in which Trephining was Done for the Relief of Local Symptoms; Death from Scarlet Fever; Exhibition of the Specimens," by Dr. De Forest Willard and Dr. J. Hendrie Lloyd, of Philadelphia, was read, in which was reported the case of a child, seven years old, with cerebral spastic hemiplegia. There were inability to walk and internal strabismus. The child was well developed. Sensation was unimpaired. There were convulsions, followed by enfeeblement of the mental faculties and athetoid movements of the right arm. As the child was rapidly growing worse, trephining was performed. Three days after the operation scarlatina developed and the child died on the eighteenth day. The autopsy disclosed no evidences of meningitis, but a condition of porencephalus involving the Rolandic region.

Dr. C. L. Dana, of New York, admitted the validity and utility of operation in certain cases. He maintained conservative views as to the propriety of operating in cases of Jacksonian epilepsy, tumors, for the relief of pain, and in porencephalus, and was desirous of hearing opinions as to the details of excision of the cortex and as to operation for infantile cerebral hemiplegia. Such cases are often associated with epilepsy, imbecility or idiocy. Dr. Dana had obtained the histories and the specimens in twelve cases of cerebral tumor that were not operated upon. Three could have been recognized, localized and operated upon. In two others, sarcomata occupied the middle of the central convolutions.

Dr. B. Sachs, of New York, stated that the result of surgical interference in focal epilepsy was particularly distressing. It had been shown that after removal of the focus the secondary degeneration also involved the cortex. In cases of tumor, operation promises the more favorably as secondary degeneration is the less thoroughly established. In focal epilepsy, improvement may be secured, but not cure. Dr. Sachs believed that in no case has there been freedom from attacks for two years after the operation. It would seem that operations upon cases of porencephalus would but tend to increase the size of the existing cavity. Cases should be carefully selected or the operation would fall into discredit. In porencephalus the motor symptoms are decided, while the mental symptoms are slight. The

evidence points to a pre-natal condition rather than to an acquired cerebral palsy. Cases of the latter kind are suitable for operation if seen at an early stage. Such a condition is frequently due to meningeal hemorrhage, and operation should be performed early. If secondary degeneration has taken place, the operation will prove useless.

DR. C. B. NANCREDE, of Ann Arbor, related a case in which no spasm had occurred for three years after operation. In focal epilepsy of long standing, he believed that hernia cerebri occurred as a result of encephalitis.

DR. BREMER, of St. Louis, called attention to the importance of testing the muscular irritability by applying the faradic current to the shaved scalp. He had found the irritability greater on the affected side. He reported a case of successful operation for focal epilepsy, with the results of an examination of the portions of the cortex excised. There were no changes in the cellular elements, but there was profound hemorrhage into the intravascular spaces. This admonishes the avoidance of too much pressure on the cortex during operation.

DR. E. P. DAVIS, of Philadelphia, expressed the view that meningeal hemorrhage in the newborn is generally due to disease of the mother, such as chronic nephritis; in this way a tendency to vascular degeneration is transmitted to the infant, with a predisposition to hemorrhage. He believed in the propriety of early surgical interference only in marked cases. The results are unsatisfactory if the mother has suffered from constitutional disease.

DR. BULLARD, of Boston, reported a case in an adult with hemiplegia and epilepsy, in which trephining was performed and the hemiplegic cyst evacuated. No attacks occurred in the subsequent two months.

DR. J. J. PUTNAM, of Boston, stated that one may be deceived in concluding that there must be focal disease because there are local spasms. Even diffuse lesions may give rise to focal sypmptoms. This fact explains some of the unsuccessful results of excision.

In closing the discussion, DR. KEEN said he was not aware of the character of the tumor at the time of operation. It is possible that its removal, without excision of the cortex, would have been the better operation. In no case had he observed a positive or permanent cure. The operation was warranted by the probability of the relief it was expected to afford. He had in this case on microscopical examination been unable to verify the existence of secondary degeneration. Cases of defective development, such as porencephalus, should not be operated upon, but, in cases of microcephalus, operation may prove beneficial, although the patient is exposed to great danger. In thirty-seven such cases there were nine deaths.

DR. WILLIAM A. HAMMOND, of Washington, read a paper on "Seven Recent Cases of Brain Surgery," which is to be published in a subsequent number of THE MEDICAL NEWS.

DR. J. H. LLOYD, of Philadelphia, reported a case of tumor of the mesencephalon, and exhibited the specimen.

DR. B. SACHS, of New York, read a paper entitled "Tuberculous Infection of the Central Nervous System," in which he reported two cases of non-tuberculous disease of the central nervous system in which exposure to tuberculous infection was followed by aggravation of the existing symptoms, with a fatal termination.

DR. E. D. FISHER, of New York, read a paper on "Lead-poisoning with Special Reference to the Spinal Cord and to Peripheral Nerve Lesions," which is to appear in a future number of THE NEWS.

DR. WILLIAM C. KRAUSS, of Buffalo, N. Y., exhibited a neuro-topographical bust, designed to show the topography of the nervous system of the head and neck. The bust is of plaster, life-size, and offers the following special features: The fissures of the brain are represented by grooved lines, deep or shallow, according to the size of the fissures in the human brain. In order to render them more distinct and visible they have been painted black. On the face and neck are represented the various electro-motor points of the muscles and nerves as determined by Erb, v. Ziemssen, and others. The motor points of the nerves are represented by circles, slightly raised and painted yellow. The course of the phrenic nerves and the brachial plexus in the neck are shown by slightly grooved lines, also painted yellow. In contrast to the nerves, the motor points of the muscles are represented by smaller circles, painted red. The various points may be designated by small printed slips or by figures and a reference table.

The bust is recommended for the use of neurologists in making comparisons, and in cerebral surgery as a guide in seeking the various centers of the brain.

THIRD DAY—SEPTEMBER 24TH.

DR. G. L. WALTON, of Boston, reported a case of "Removal of a Neuroma, Followed by Disappearance of Local Anesthesia of Fourteen Years' Standing." Fourteen years ago Prof. B., aged twenty-nine years, cut his left index finger with a chisel. The injury left a sensitive cicatrix over the seat of the nerve, and complete anesthesia of the region supplied by it. Within a year of the date of consultation, numbness and tingling spread up the wrist and forearm, with pain and tenderness of the nerve-trunk (neuritis?). A region of numbness existed on the chest, and another on the thigh. There were general loss of nutrition and troublesome insomnia, with a history of continuous overwork. After a brief trial of general remedies and galvanism (with no result beyond some improvement in general condition), the nerve was cut down upon by Dr. M. H. Richardson. A neuroma was found involving the whole nerve-branch. This, with a portion of the nerve, was removed. The acute symptoms disappeared rapidly, and the long-standing numbness of fourteen years more slowly, sensation in the finger being perfect four months after operation. The case shows that the duration of anesthesia may be practically disregarded in considering the question of operation upon a peripheral nerve.

DR. GEORGE W. JACOBY, of New York, read a paper on "The Electro-physiology of Reflexes, with a Description of a Hitherto Unknown Localized Physiological Reflex Phenomenon." He stated that in the course of his observations he had discovered a reflex contraction of muscles of the chin when the negative pole of a galvanic battery is applied to the radial side of the forearm. Examination of 200 persons showed that the reflex was

present in over 70 per cent. of normal individuals. In no normal case could a reflex be obtained except upon kathodal closure. All kinds of mechanical excitation were also fruitless. In certain pathological cases an anodal reflex was obtainable; in certain others an anodal reflex was produced before a kathodal one, and in still others the contraction showed also a quantitative change.

Dr. V. P. Gibney, of New York, read a paper on "Supplemental Treatment of the Paralysis of Acute Anterior Poliomyelitis," which appears elsewhere in the current number of The Medical News.

Dr. Walter Channing, of Boston, read a paper entitled "Deformity of the Palate in Idiots." He presented a series of charts and plaster casts showing the formation of the palate in one hundred and fifty cases of idiocy. The cases were classed into average, neurotic, and deformed, of which there were respectively 43, 30 and 37 per cent.

Dr. Irving C. Rosse, of Washington, read a paper entitled "Triple Personality," in which he reported the case of a man, thirty-five years old, who presented "triple delusions," believing that, in addition to himself, he was a "young man" and "Lucifer." This mental condition had remained unchanged, with the exception of about three months of comparative latency of the delusions nine months before, since when gradual impairment of the mental faculties had left the patient in a state of dementia.

Dr. Landon Carter Gray, of New York, read a paper upon "Intra-cranial Syphilis," in which he dwelt upon a complex of symptoms including cephalalgia, irregularly periodical, generally recurring at night, occasionally in the afternoon or in the morning, and associated with insomnia. The symptoms disappeared upon the development of palsy. Dr. Gray maintained that hemiplegia developing in middle age should arouse a suspicion of a syphilitic origin. Headache and insomnia are indicative of an early stage of intra-cranial syphilis, although they may appear later.

Dr. Mills, of Philadelphia, stated that the development of paralysis upon the subsidence of headache and insomnia was unimportant diagnostically and therapeutically. The symptoms occurred as a result of degenerative changes.

Dr. William Osler, of Baltimore, read a paper upon "Double Athetosis," based upon fifty-three cases reported and numerous personal observations. He believed that athetosis is compatible with a high degree of intelligence, but is usually accompanied by mental impairment.

Dr. Charles K. Mills, of Philadelphia, reported a case in which an apoplectic seizure was followed by deafness, which became more decided after a second attack, with the appearance of partial left-sided paralysis. At the autopsy, lesions were found in the first and second temporal convolutions of both hemispheres. Dr. Mills also reported a case in which a subcortical hemorrhagic cyst was found beneath the arm and leg areas.

Dr. James Hendrie Lloyd, of Philadelphia, read a paper entitled "Tumor of the Mid-brain and Left Optic Thalamus," which is to appear in The Medical News.

Dr. J. J. Putnam, of Boston, referred to the case of a child with double athetosis, in which post-mortem no lesion could be found. At the autopsy in a case of hemichorea, there was a distinct spot of softening in the tegmentum of one side; in another patient, with locomotor ataxia without impairment of intelligence, there was a linear hemorrhage in the subcortical area beneath the paracentral lobule, with secondary degeneration in the cord. In a case of sensory aphasia operated upon, a cyst was found in the left temporal lobe.

Dr. L. C. Gray, of New York, reported the case of a man with hemiplegia and impairment of the muscular sense, in which, on operation, no lesion could be discovered. Death took place a day later. The autopsy revealed at the junction of the arm and leg centers a round-cell sarcoma undergoing cystic degeneration at the center.

Dr. C. L. Dana, of New York, reported the case of a man, forty-three years old, with a history of syphilis ten years previously, who presented headache, left hemiconvulsions and coma. On recovery, left hemiplegia and left hemianesthesia persisted. At the autopsy a gumma of the dura mater over the right central convolutions was found. In another case, in a man fifty-five years old, with progressive right hemiplegia and some loss of sensibility on the same side, a tumor about as large as a hen's egg was found in the middle of the left precentral convolution. Dr. Dana held that cutaneous sensations must have their representation in the cortex, having a larger and more diffuse representation than the motor. When one side is involved in disease, compensation takes place from the other side to a greater degree than in the case of motion or other sensations.

Dr. Philip C. Knapp, of Boston, reported the case of a child with athetosis from cerebral palsy, in which the autopsy disclosed hydrocephalus and basilar tuberculous meningitis. In another case, anesthesia was associated with a lesion of the motor cortex. He conceded that tactile sensibility was more largely represented posteriorly than anteriorly to the fissure of Rolando. Conversely, growths in the Rolandic region may occasion no motor paralysis.

Dr. J. W. Putnam, of Buffalo, reported a case in which, shortly after the removal of nasal polypi, memory became impaired. On the eighth day, owing to the absence of sensory or motor symptoms, a diagnosis of abscess of the left frontal lobe was made. On trephining, three ounces of pus were removed from the frontal lobe. At the autopsy, a second abscess was found in the frontal lobe of the opposite side. In another case, in which there was a spastic condition of all four extremities, a glioma at the base was found pushing the medulla to one side. In a child with athetosis involving the head as well as the extremities, there was an apparent absence of the bridge of corpus callosum and an abscess of each temporal lobe.

Dr. Bremer reported a case of excision of the wrist-center on the right side for focal epilepsy, in which neither paralysis nor other symptom followed the operation. The question of cortical motor and sensory areas is still unsettled. In the presence of spastic symptoms, the location of the tumor is not so important as is its character. The varying supply of blood to the hemorrhagic cyst probably occasions spastic symptoms.

In conclusion, Dr. Mills expressed the view that there exists a great sensory lobe, not the gyrus fornicatus or the hippocampal region, but a lobe with

anatomical demarcations. It may include the gyrus fornicatus, the quadrate lobe, and the posterior parietal lobule. These regions constitute subdivisions of this sensory lobe, corresponding to subcutaneous muscular groups. Dr. Mills thought that there must be a sensory-motor association tract as well as a sensory-motor audition tract. Cerebral paresthesia is comparable to paraphasia and paralexia.

DR. C. EUGENE RIGGS, of St. Paul, reported a case of paranoia in a young man who, in addition to other symptoms, had periods of double consciousness. The question was raised whether the patient's actions were prompted by the morbid egoism so common in paranoia or constituted a manifestation not infrequently associated with epilepsy.

DR. DAVID INGLISS, of Detroit, read a paper, entitled "Friedreich's Disease; Its Relation to Conducting Paths in the Cord," in which he developed the conclusion that the function of the posterior columns and of the direct cerebellar tract is not to transmit sensory impulses upward, but rather that they are the main channels for the transmission of coördinated motor impulses downward. The anatomical relations of these tracts with the midbrain and the cerebellum indicate that the tracts transmit coördinated impulses from the higher to the lower centers.

The paper of DR. J. T. ESKRIDGE, of Denver, on "Gunshot Wound of the Left Cuneus with Right Homonymous Hemianopsia," will appear in a later number of THE MEDICAL NEWS.

The paper by DR. C. H. HUGHES, of St. Louis, on "The Virile Reflex in Relation to Clinical and Forensic Neurology," was read by title. Dr. Hughes discussed his method of eliciting the "virile reflex," and set forth its relation to the analogous bulbo-cavernous reflex of M. Ouvanoff.

The novice, in seeking to elicit the clinical and physiological sign, may be inclined to doubt its existence, because some skill in palpation, a sort of *tactus eruditus*, is necessary in examining for it. The characteristic jerking-back of the bulbous urethra within the sheath of the penis can be felt only when carefully sought for, and it cannot ordinarily be seen.

The value of this sign in its clinical aspect is obvious, and in its medico-legal relations it must likewise be apparent, especially in questions of exaggerated, perverted, or lost virility. By it we may be aided in the solution of questions of morbid erotism, erotomania, nymphomania, satyriasis, psychical or physical lust, questions of rape from rational and purely lustful purpose or from morbid perversion and insane impulse, etc.

The paper of DR. J. T. ESKRIDGE, of Denver, entitled "Fracture of the Twelfth Dorsal Spine, Followed by Injury of the Spinal and Sympathetic Nerve-supply of the Bowel in the Region of the Ileo-cecal Valve, Intestinal Hemorrhage, and Death on the Seventh Day," appears in the current number of THE MEDICAL NEWS.

The following were elected to active membership: Dr. H. A. Tomlinson, of Philadelphia; Dr. Edward Cowles, of Somerville, Mass.; Dr. Henry H. Donaldson, of Worcester, Mass.; Dr. James Wright Putnam, of Buffalo, N. Y.; Dr. William Browning, of Brooklyn, N. Y.; Dr. Edward B. Angell, of Rochester, N. Y.; Dr. G. J. Preston, of Baltimore, Md.; Dr. Richard Dewey, of Kankakee, Ill.; Dr. Walter Channing, of Boston, Mass.

The following officers were elected for the ensuing year:

President.—Dr. C. L. Dana, of New York.

Vice-Presidents.—Dr. P. C. Knapp, of Boston, and Dr. E. N. Brush, of Baltimore.

Secretary and Treasurer.—Dr. G. M. Hammond, of New York.

Councillors.—Dr. Wharton Sinkler, of Philadelphia, and Dr. E. D. Fisher, of New York.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from p. 371.)

SECOND DAY—SEPTEMBER 23D.

DR. J. C. WHITE, of Boston, opened the discussion on Tuberculosis of the Skin. He presented "Its Clinical Aspects and Relations."

DR. JOHN T. BOWEN, of Boston, considered "The Pathology of Cutaneous Tuberculosis." He confined himself to the anatomy of the affection.

Baumgarten has shown that the fixed tissue-cells are the first to become impressed by the tuberculous virus, and are converted into epithelioid and giant-cell forms. While it may be questioned whether we are yet justified in regarding the epithelioid and giant-cells as derived in all instances from the fixed tissue-cells alone, it is now clear that the rôle of the white blood-corpuscles in tuberculosis, as well as in other chronic inflammatory processes, has been greatly exaggerated.

Four distinct varieties of cutaneous tuberculosis may be considered, viz.: miliary tuberculosis, scrofuloderma, lupus, and tuberculosis verrucosa cutis. Miliary tuberculosis of the skin occurs rarely. It is found at the entrance to mucous cavities, in persons suffering from advanced tuberculosis of internal organs, and is characterized clinically by painful ulcers with indented edges. Anatomically, this form of tuberculosis presents the characteristics of an acute process, with the presence of a large number of tubercle bacilli, and an advanced stage of necrosis. It is analogous to the acute tuberculosis of internal organs. Scrofuloderma represents a tuberculosis of the subcutaneous tissue and lower layers of the corium, and the tubercle bacilli, while less numerous than in the miliary form, are usually found in greater numbers than in lupus. In lupus the process has its starting-point in the lower portions of the corium, affecting the upper portions by extension. Lupus differs from other forms of tuberculosis in being less acute and more slowly progressive.

It was maintained that in tuberculosis verrucosa cutis the inflammatory complications, which are pronounced in some cases, are by no means constant. The number of tubercle bacilli found in the lesions may be small. Anatomically, tuberculosis verrucosa differs from lupus verrucosa in its more superficial seat, and in the early appearance of the papillary hypertrophy; the verrucous forms of lupus are usually consecutive to some degree of ulceration. In tuberculosis verrucosa cutis a direct inoculation can usually be proved to have taken place,

a mode of infection that has as yet been demonstrated in only a small number of cases of lupus.

Dr. G. H. Fox, of New York, discussed "The Treatment of Tuberculosis of the Skin."

In the subsequent discussion Dr. H. G. Piffard, of New York, said that the connection between what was called pulmonary consumption and lupus and the so-called scrofulodermata had long been surmised. Recent advances in microscopy had enabled the detection of tubercle bacilli in the lesions, and to establish the relationship on pathological grounds. Dr. Piffard expressed the belief that lupus erythematosus is entitled to the name "lupus," as he thinks it too is of bacillary origin. Cold abscess of the skin is probably due to the same cause, as is also rodent ulcer. He agreed with Dr. White in believing that there should be a collective term for all of the various tuberculous diseases. In treatment he advocated cutting out the whole diseased patch, unless it was very extensive. Next to the knife he placed the actual cautery, after removal with the curette of as much of the growth as possible. Arsenic and chloride of zinc are also to be depended on.

Dr. C. W. Allen, of New York, commended multiple scarification, and combined pyrogallol and mercurial plasters; he thought that there might yet be a future for tuberculin.

Dr. J. Zeisler, of Chicago, expressed himself as in thorough accord with Dr. White. His experience had converted him to the use of the galvano-cautery. He testified to the efficacy of the solid stick of nitrate of silver, which, bored into the skin, would act both as a knife and caustic. He was not enthusiastic as to tuberculin.

Dr. E. B. Bronson, of New York, believed that it was best to retain for some time our present terminology for the different tuberculous diseases. In regard to tuberculin, he had seen improvement in some cases treated with it, but on the whole his experience had made him regard the remedy unfavorably. He had had good success with the dental burr, as first advocated by Dr. G. H. Fox. The nitrate-of-silver stick was also good.

Dr. J. N. Hyde, of Chicago, was glad that Dr. White accepted local contagion as the cause of lupus, a view that he himself was among the first to advocate. He thought that in this country there were but few cases of lupus with a history of pulmonary tuberculosis in the family, or with tuberculous disease elsewhere. He did not believe in the treatment by scarification. Both the curette and nitrate of silver were serviceable in proper cases. In regard to tuberculin, he thought it possible that in time something of value might be found in it.

Dr. L. A. Duhring, of Philadelphia, preferred in private practice for the present to retain the old names. He had not found lupus associated with general tuberculosis. He recommended pyrogallol most highly, using it in the form of a plaster with resin and soap plaster—three of resin plaster and one of soap plaster—to be worn continuously. He had not found the local use of bichloride of mercury beneficial. He had found tuberculin helpful, though he could not report any case of cure.

Dr. P. A. Morrow, of New York, agreed with Dr. White that as lupus and some other diseases had a common etiological factor, we should place them together under a common heading. He advocated the use of multiple scarifications followed by mercurial plaster. For destruction of the small lupus nodules he recommended punctate cauterization with a white-hot instrument. Chloride of zinc is superior to pyrogallol as a caustic. Excision will probably increase in favor as a means of treating lupus.

Dr. L. D. Bulkley, of New York, expressed a want of satisfaction with any of the current plans for the external treatment of lupus. Internally, he has great faith in phosphorus as a curative agent, the nodulues softening and disappearing under its continuous use. As to pyrogallol, that too was admirable. He applies it in powder, pure, after scraping. Salicylic acid combined with pyrogallol is also useful.

Third Day.—September 24th.

Dr. L. A. Duhring, of Philadelphia, read a paper entitled "Notes of a Visit to the Leper Hospital of San Remo, Italy." In reply to a question he replied that no attempt at segregation was made in San Remo. There were but few cases in the hospital, and they were in an ordinary ward of a general hospital. They were not permitted to leave the confines of the hospital.

Dr. P. A. Morrow, of New York, then followed with a paper on "Skin-grafting," and showed a case in which the operation had been done by the method described, with admirable results.

Dr. Clarke asked if the inclusion in the graft of the deeper structures of the skin, as recommended, would give any better results than if the more superficial parts only were included. Dr. Morrow replied that he thought that the deeper grafts would be more certain to take, and he had had not a single failure. He had made more than fifty grafts of hairy skin upon a cicatricially bald scalp, and all of them had taken, and from many of them the hair was growing nicely.

Dr. L. D. Bulkley, of New York, read a paper entitled, "A Therapeutic Note on Alopecia Areata."

Dr. J. Zeisler, of Chicago, believed that alopecia areata was due to a parasite, though perhaps some cases are dependent upon a neurosis. The latter were most obstinate. He was in favor of treating all cases by epilation about the patches. He had no success with pilocarpine. He regarded a concentrated solution of common salt as a good remedy for stimulating the growth of the hair.

Dr. W. T. Corlett spoke in favor of acetic acid as a remedy in alopecia areata. Some cases, however, recover spontaneously.

Dr. G. H. Fox was always pleased to hear anyone speak with confidence of any treatment of alopecia areata, as Dr. Bulkley had done of carbolic acid. He was rather skeptical of any remedy. In his hands a strong solution of ammonia had proved as effective as any remedy. He thought that general treatment of the patient was quite as important as any local application.

Dr. J. E. Graham had never seen any cases that would lead him to believe that alopecia areata was contagious. He did not think that, because antiparasitic remedies were useful, this was a proof of the parasitic nature of the disease.

Dr. P. A. Morrow thought that there had been a sufficient number of cases of contagion reported to remove any reasonable doubt of the contagiousness of the disease.

He quoted an instance in which a number of cases were traced to one barber. He had seen one case of probable contagion.

DR. L. A. DUHRING said that in spite of a careful study of alopecia areata he had never been able to find any parasite in the disease; nor was he convinced that the disease was contagious. He believed that there was a disease simulating alopecia areata, and often reported as such, that sometimes occurred epidemically, but was not alopecia areata. He regarded arsenic taken internally as very valuable in the treatment of the disease. He could see no reason for epilating the healthy hair about the patches.

DR. J. C. WHITE said that positive evidence of both the parasitic and the neurotic element in the etiology of the disease was still wanting. Clinical evidence points both ways. He had seen cases of apparent contagion. He had seen thirty cases of a disease simulating alopecia areata occurring in an asylum, which were not cases of ringworm, but were probably instances of so-called contagious alopecia areata. He did not think that they were true alopecia areata. His favorite remedy was a lotion consisting of half a dram of croton oil to eight ounces of turpentine, used daily. Of course, it failed in some cases, as do all remedies. If it failed, he used other remedies that had been commended, but they did not do any better. He did not believe that there was any specific remedy.

DR. H. W. STELWAGON had never been able to trace a case to a contagious origin. Local stimulation is more to be relied on in treatment. He was fond of equal parts of turpentine, cantharides and tincture of capsicum, with arsenic internally.

DR. J. N. HYDE believed that the time would come when alopecia areata would be regarded as simply a symptom. Some cases were doubtless parasitic and some neurotic in origin. In bad cases he used creasote locally. After, say, from the forty-fifth to the forty-eighth year of life, the chances of recovery are greatly decreased.

DR. H. G. KLOTZ had had one case in which hereditary syphilis was probably the underlying cause, the boy getting better under specific treatment.

DR. W. C. ALLEN believed that the disease was parasitic and thought that he had in his own practice observed a case of contagion. He thought that internal treatment was valuable. Naphthol and pyrogallol had both proved useful in his hands.

DR. J. GRINDON had never met with a case that suggested either a parasitic or contagious origin of the disease. He believed in its tropho-neurotic origin.

DR. F. B. GREENOUGH in practice used a half-dram of carbolic acid in an ounce of water as a lotion.

DR. L. D. BULKLEY said that he applied the 95 per cent. solution of carbolic acid to a small portion only of the scalp at a time. It should be brushed over lightly at first, so as to benumb sensibility, and then rubbed in more thoroughly. He had not used it elsewhere than on the scalp. The skin is red for a few weeks; this disappears and the hair grows. He also administers strychnine and phosphoric acid, and keeps up the nutrition of the patient.

DR. R. W. TAYLOR, of New York, read a paper entitled "Angioma Pigmentosum et Atrophicum," by DR. A. W. BRAYTON, of Indianapolis.

DR. J. C. WHITE stated that his investigations showed that the disease was not limited to Russian Jews, but was met with also in persons of English and of French descent.

DR. L. A. DUHRING read a paper entitled "Experiences in the Treatment of Chronic Ringworm in an Institution for Boys."

In the discussion, DR. G. H. FOX said that he had found chrysarobin useful, as had Dr. Duhring. He began the treatment by clipping the hair short and shaving, either only over the patches or over the whole scalp, and applying chrysarobin in solution. He disliked greasy applications. Hydronaphthol plaster, as recommended by a European physician, had proved more satisfactory than chrysarobin. He advocated epilation when practicable.

DR. J. ZEISLER advocated pyrogallol as a parasiticide.

In reply to a question, DR. DUHRING said that some of the cases recovered in six weeks, and some not for a year.

DR. WHITE thought that white chrysarobin was a good remedy; it was not a safe one to use outside of an asylum or hospital. He recommended a combination of sulphur, carbolic acid, and naphthol, made into an ointment.

DR. STELWAGON recommended an ointment composed of tar, sulphur, and citrine ointment.

DR. SHERWELL advised keeping the scalp saturated with a mild oil and covered by a skull-cap.

In concluding, DR. DUHRING said that the cases were all well when the treatment was withdrawn, and that they remained well for at least one year. Epilation did not repay the vast amount of labor it cost. He regarded ointments as most useful remedies.

DR. J. ZEISLER, of Chicago, then read a paper on "Epilation: Its Range of Usefulness as a Dermatotherapeutic Measure."

In the discussion, DR. G. H. FOX said that he was glad to hear anyone advocate epilation in sycosis, as he had found it a most useful remedy. After epilation, a sulphur paste is valuable. He had not found epilation so promptly curative as had Dr. Zeisler, while he laid more stress on dietetic management than did the latter. He was sure that epilation was useful in some cases of chronic ringworm of the scalp.

DR. H. G. KLOTZ also spoke in favor of epilation in sycosis, though he had cured many cases without it, notably with mild naphthol ointments. He thought epilation valuable in syphilitic lesions about the hairs, as well as in all the pustular affections implicating the hair.

DR. L. A. DUHRING had not been able to practise epilation on his patients on account of the pain it caused, especially on the upper lip. He could not see much use in epilating in alopecia areata when the hairs about the patch were firm.

DR. P. A. MORROW said that he did not think it necessary to pull out all the hairs about the bald patches, but it was a good thing to make traction on all of them and to remove all that were loose. Epilation was a requisite in all rebellious cases of trichophytosis. If the hair is removed by a quick, sudden movement, the operation is nearly painless.

DR. H. W. STELWAGON believed that many cases of

sycosis could be cured without epilation. He would speak in special praise of Fleming's solution in trichophytosis, diluting it at first one part to five or six of water, and gradually increasing the strength to just short of marked irritation.

Dr. S. Sherwell spoke of the connection between catarrhal conditions of the nose and sycosis of the upper lip.

Dr. J. H. Hyde said that the last time he was in London and Paris he had observed that epilation was quite generally practised about the patches of alopecia areata.

In closing, Dr. Zeisler said that when epilation was properly performed it was almost painless. As he regards alopecia as a parasitic disease, spreading at the periphery, he epilated about the patches to stop their spreading.

Fourth Day—September 25th.

Dr. J. E. Graham, of Toronto, read a paper on "Molluscum Contagiosum."

Dr. Bowen said that there was little question but that the disease was contagious. It is still unproved whether certain bodies found in molluscum are or are not coccidia.

Dr. Allen had no doubt about the contagiousness of the disease, and related cases in an asylum spreading from one case. Excision is never necessary. The nodules can readily be squeezed out, and then lightly touched with a caustic. He believed in their parasitic origin.

Dr. J. C. White, while believing that molluscum was contagious, was not prepared to accept the psorosperm as its cause.

Dr. J. N. Hyde pointed out that in the statistics for the year just closed, 17 cases of molluscum contagiosum were reported, viz.: 9 from Boston, 5 from New York, 2 from Chicago, and 1 from St. Louis.

Dr. F. B. Greenough believed the disease to be contagious. In treatment he simply bores into the formation with nitrate of silver stick.

Dr. J. E. Graham thought from evidence so far brought forward that the so-called psorosperms were simply degenerated epithelial cells.

Dr. J. N. Hyde, of Chicago, then read a paper entitled "Note Relative to Pemphigus Vegetans."

In the discussion, Dr. L. A. Duhring said that he had had the opportunity of seeing the case described and would corroborate what Dr. Hyde had said of it. It certainly was more of the nature of pemphigus than of anything else.

Dr. Bowen had seen a case of Neumann's in Vienna, and this one brought that one back very vividly to his mind. He regarded the term "pemphigus" as a most indefinite one, and thought that it gave very little idea of the pathology of the case under discussion.

Dr. S. Sherwell had seen a case in a woman with analogous symptoms, which was cured by ovariotomy.

Dr. J. E. Graham related the history of a similar case of his own. It became much better under arsenic but suffered a relapse.

Dr. J. N. Hyde, in closing, said that in his case there was no disease of the ovaries. He regarded the prognosis in his case as not good.

Dr. H. W. Stelwagon then read a paper on "A Study of Mycosis Fungoides."

Dr. Hartzell emphasized the infectious nature of the tumors, and thought that we must look to inoculation experiments for proof.

Dr. Bowen spoke of the disagreement among pathologists in regard to the exact nature of the tumors.

Dr. Duhring said that the disease was a general one of the skin, and did not to any extent seem to affect other organs. He believed it to be an infectious disease. It may be regarded as on the border-line between an inflammatory new-growth and a tumor.

Dr. Fox related a case of apparent infection of the disease in the New York Skin and Cancer Hospital. He also spoke of the early diagnosis of the disease, and reported a case that at first looked like eczema marginatum, but afterward developed the characteristic tumors.

Dr. Stelwagon, in closing, said that in looking up the literature of the disease he had found some fifty or a hundred reported cases. It was exceptional for the disease to begin as tumors.

Dr. M. B. Hartzell, of Philadelphia, then read a paper on "Lymphangioma Circumscriptum, with Report of a Peculiar Case," which is to appear in The Medical News.

Dr. C. W. Allen then made some remarks on "Erythema or Nævus Nuchæ."

Dr. Zeisler thought it probable that erythema nuchæ was often due to pressure and rubbing.

Dr. Joseph Grindon, of St. Louis, Mo., read a paper on "A Case of Lichen Ruber." This case is placed under the above caption inasmuch as, although differing in several important particulars from the hitherto reported American cases, it tallies in most points with the descriptions of the younger Hebra. The writer believes that the constitution and limitations of the lichen group are still far from being settled, and would provisionally class as lichen ruber cases of chronic papular inflammatory dermatoses not readily falling in with any of the other better-defined members of the group, such as L. planus or L. scrofulosus.

The disease in this instance was characterized by the formation of firm, hard, red papules of rounded outline and profile, little or not at all scaly, intensely pruritic, of very slow evolution, occurring first on the face and after several years spreading to the body and extremities. The hairs and nails were implicated, but there was no marked depreciation of the general health. The papules after a longer or shorter interval tended to form patches, by the appearance of new lesions among the older ones. These patches finally lost all trace of a papular origin, but were divided up by deepening of the normal furrows, consequent upon the thickening and infiltration. The disease showed several partial remissions, and one period of apparent cure extending over several months. The best results were obtained from the persistent use of Unna's carbolic-sublimate salve. Arsenic had no appreciable effect.

Dr. Zeisler was inclined to view the case as one of lichen planus. In this disease plantar and palmar thickenings are apt to form. Arsenic often cures these patients.

Dr. S. Sherwell agreed with Dr. Zeisler in his diag-

nosis, though the case presented many exceptional fearures, especially the involvement of the nails.

DR. HYDE said that he always found the polygonal outline of the papules to be well marked, something that does not seem to be familiar to the Germans and the French.

DR. DUHRING agreed with the previous speakers in this diagnosis. The polygonal shape and umbilication are often wanting.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Washington, September 22, 23, and 24, 1891.

FIRST DAY—SEPTEMBER 22D.

DR. W. C. GLASGOW, of St. Louis, delivered the Presidential Address, in which he reviewed the progress of the science of laryngology, and especially the influence that had been exerted by the American Laryngological Association, in rescuing the practice of laryngology from charlatans and giving it a prominent and honorable position among the special fields of practice. Appropriate action was taken with regard to the death of Dr. E. Carroll Morgan, who, as President of the Association, occupied the chair at its last meeting in Washington, two years ago. A minute was also made of the death of another member, Dr. Hosmer A. Johnson, of Chicago, who died since the last session.

DR. GLASGOW read a paper entitled "A Case of Foreign Body in the Trachea." A child, eight years old, was said to have swallowed, two hours previously, a toy balloon with a whistle attached. There were paroxysms of suffocation, in the intervals between which the child appeared to be perfectly well, without any interference with respiration. While under examination, the child suddenly became aphonic, struggled for breath, lost consciousness, and frothed at the mouth. The paroxysm passed off in a few minutes, and the child resumed its normal condition. It could swallow water, and a bougie had been passed into the stomach, showing that the esophagus was clear. By inspection, the larynx appeared unobstructed. Chloroform anesthesia was so poorly borne that a thorough examination was not made. It was concluded that the manifestations were hysterical or epileptic. Finally, after tracheotomy was performed, the rubber part of the balloon was seen to project into the lower part of the tube, and was extracted through the tracheal wound; subsequently the wooden whistle was extruded through the glottis, and the child recovered. In the interval between the paroxysms there was slight enfeeblement of breathing over the left lung.

DR. CLINTON WAGNER, of New York, read a paper entitled "A Case of Thyrotomy in a Child Eighteen Months Old." He said that thyrotomy should only be resorted to for the relief of urgent dyspnea arising from laryngeal obstruction, either by a benign growth or a foreign body, in order to accomplish the removal of such obstruction. In a case of malignant disease, it is only permissible when there is a reasonable chance of removing all diseased tissue. In tuberculosis of the larynx it is unjustifiable. Dr. Wagner had performed the operation ten times; six of the cases perished, but not as a result of the operation. The remaining four cases, all in children, recovered. The case reported was that of a neglected child suffering with dyspnea, the cause of which was uncertain. Two weeks after a preliminary tracheotomy, thyrotomy was performed, and a small papilloma was detected near the posterior extremity of the left cord and removed. The child did well for ten months after the operation, when he succumbed to an attack of croup.

In the discussion, DR. INGALLS, of Chicago, advocated the use of the index-finger for diagnostic purposes.

DR. MULHALL, of St. Louis, commended the finger-nail as a useful instrument for the removal of small superficial papillomata of the vocal bands.

In young children, under two or three years of age, DR. WAGNER considered the removal of papillomata by the mouth entirely impracticable.

DR. HARRISON ALLEN, of Philadelphia, read a paper on "The Tonsil in Health and Disease." He considers the tonsils analogous to Peyer's patches in the small intestine. He held the operation of amputation of the tonsils as unscientific and unnecessary. In many cases, the enlargement of the tonsils subsides without direct treatment, if the adenoid tissue in the naso-pharynx is restored to a healthy condition. Dr. Allen therefore recommended primary operation upon existing pharyngeal growths. When bands of cicatricial tissue stretch across the surface of the tonsil, obstructing the openings of the crypts of the gland, he advocated cutting such bands in order to relieve tension and favor expulsion of the contents of the crypts. Subsequently, astringent applications are made by means of a probe carried into the crypts, which Dr. Allen prefers to the cautery or knife.

DR. JONATHAN WRIGHT, of Brooklyn, said that it was his experience that when he removed a pair of enlarged tonsils, the adenoid tissue above disappeared spontaneously. He held that the tonsils both caused irritation and dammed up the secretions, and thus led to pharyngeal disease.

DR. JOHN O. ROE, of Rochester, advocated the evacuation of abscess in the tonsil by means of sharp scissors, which are used closed as a probe and opened only after introduction, cutting only so much as may be needed and avoiding large vessels.

DR. CLARENCE C. RICE, of New York, read a paper on "The Troublesome Symptoms Caused by Enlargement of the Epiglottis and the Advisability of Reducing the Size of this Cartilage by Operative Measures." Many deformities of the epiglottis are recognized, especially those occurring in the course of pulmonary tuberculosis, lupus and syphilis. When the epiglottis is the seat of a chronic morbid process, or the lingual tonsil is enlarged so as to cause irritation, there arise a sense of fulness and tickling in the throat and frequent cough. In addition to the edema, tumefaction and inflammatory swelling of the overlying tissues, the cartilage itself is actually increased in size. The epiglottis may congenitally be abnormally large; more frequently the increase in size is caused by injuries, the excessive use of tobacco, alcohol, and by local inflammatory disturbances. Under the latter conditions Dr. Rice advised the removal of a portion of the enlarged part with long-bladed scissors or cutting-forceps. He had operated thus in two cases, using cocaine applications followed by albolene. He did not approve of the employment of the

epiglottitome of Mackenzie, and had found the galvano-cautery objectionable because the resulting burns are long in healing. The same objection applies to the use of the hot snare. The operation of removing part of a permanently enlarged epiglottis is applicable for cases in which astringents and ordinary treatment have failed.

Dr. Wagner stated that in a case of carcinoma of the epiglottis, reported ten years ago, he removed the entire epiglottis by the sub-hyoidean method, and no ill-effects followed. Dr. Wagner considered the partial removal advocated by Dr. Rice a justifiable procedure.

In the discussion on the "Result of Treatment of the Upper Air-passages in Producing Permanent Relief in Asthma," Dr. Bosworth insisted upon a recognition of the general morbid condition in cases of true asthma. He distinguished three factors in every attack: 1, The peculiar neurosis; 2, some external, perhaps atmospheric, excitant; and 3, frequently some local condition in the nose that entails unusual susceptibility to certain irritants. In a large proportion of cases a restoration of the normal respiratory function and a removal of obstruction from the nose or upper air-passages confers immunity from future attacks.

Dr. Bosworth did not insist upon a nasal factor in every case of asthma, but when such abnormality was found it should receive appropriate treatment.

Dr. Mulhall, of St. Louis, presented a right-angled laryngeal cutting-forceps with a novel hinge.

Dr. Asch, of New York, presented a new intra-nasal galvano-cautery electrode, with the handle at an angle, so as not to obstruct the view.

Second Day—September 23d.

Dr. Jonathan Wright, of Brooklyn, read a paper on "Nasal Papillomata." He contended that nasal papillomata are extremely rare, and that the name is misleading. He preferred the designation "papillomatous fibroma." What have generally been mistaken for papillomata, upon investigation prove to be ordinary hypertrophic inflammatory masses or glandular hyperplasia, principally involving the inferior turbinated body. True papillomata, as a rule, occur upon the septum, in conformity with the observation that the muco-cutaneous junctions are the favorite sites for epithelial proliferations.

Dr. Jarvis advocated the employment of chromic acid to cauterize the bases of these growths after their removal, which always prevents their return.

Dr. J. Solis-Cohen proposed the name of dendritic vegetations for the so-called papilloma.

Dr. E. L. Shurly, of Detroit, read a paper entitled "A Study of a Case of Nasal Tuberculosis." The subject was a monkey with nasal catarrh and a profuse discharge containing tubercle bacilli. The discharge was diminished by the employment of antiseptics. The monkey was subsequently killed, but no tuberculous lesions were detected in the lungs or other viscera. It appeared to be simply a case of local tuberculous infection limited to the nose.

Dr. Chas. L. Knight, of New York, read a paper on "Cysts of the Middle Turbinated Bone." He considered the affection rather frequent, but often unrecognized. Of the two theories proposed to account for the development of the cysts—(1) rarefying osteitis, and (2) hypertrophic rhinitis—he believed the latter the more probable. An ossific projection growing from the middle turbinated bone gradually curls upon itself until, finally meeting the body of the bone, it forms a closed cavity. Such cavity, being lined with ciliated epithelium, contains mucous secretion, and, if inflamed, muco-pus. Operative treatment is simple: the cyst cannot be removed entire, but is extirpated, and antiseptic dressings are applied. These cysts occur only in connection with the middle turbinated bone, and none of the cases was under twenty years of age.

Dr. F. H. Bosworth, of New York, read a paper on "Various Forms of Ethmoid Disease," based on an analysis of twenty-seven cases that had been under treatment during the past five years. He distinguished five varieties, reporting illustrative cases of each: First, extra-cellular myxomatous degeneration, without purulent discharge; second, extra-cellular myxomatous degeneration, with purulent discharge; third, purulent ethmoiditis with nasal polypi; fourth, intra-cellular myxomatous degeneration without pus; and, fifth, intra-cellular myxomatous degeneration with pus.

The second variety may be regarded as a later stage of the first, while the fifth is a later stage of the fourth, thus reducing the varieties to three. For the first and second, as well as for the fourth and fifth varieties, no definite cause was assigned. The third variety may be regarded as the direct result of the nasal polypi, and not as a cause, as has been stated. This view is substantiated by the fact that in a majority of cases the ethmoid disease was accompanied with purulent disease of the antrum.

The diagnosis is based on careful ocular inspection, and a nice tracing of the source of pus-discharge. The diffuse myxomatous degeneration, so frequently seen covering the middle turbinated bone, should in the majority, if not in all cases, be accepted as evidence of a diseased condition of the mucous membrane lining the ethmoid cells. The treatment of all forms consists in uncovering the ethmoid cells by removing the convex cap of the middle turbinated body by means of the snare, and subsequently breaking up and destroying, as far as possible, the trabeculæ by means of the electric burr or the curette.

Dr. W. E. Casselberry, of Chicago, read a paper on the "Radical Treatment of Nasal Myxomata," in which the ground was taken that the best results follow extirpation of the base from which the myxomata grow. In two-thirds of the cases, myxomata develop in connection with or beneath the middle turbinated bone. They rarely develop from flat surfaces, but generally from free borders or edges. From the effects of hypersecretion the mucous membrane becomes sodden and furnishes a good soil for the growth of myxomata. Such a soil is found upon the free edge of the middle turbinated bone, and hence the frequency of their occurrence in this situation. These growths may be removed with curved scissors or with punch-forceps, and if part of the bone is removed at the same time it is generally an advantage, although not too much should be taken away for fear of occasioning cerebral mischief. The site of the growth can be touched with the cautery.

THIRD DAY—SEPTEMBER 24TH.

DR. J. SOLIS-COHEN, of Philadelphia, considered "The Symptoms and Pathological Changes in the Upper Air-passages in Influenza." The prominent changes are lymphoid infiltration of the soft parts, causing more or less edematous swelling of the soft tissues. The disease affects both the lymphatic and sanguineous vascular systems, differing in its manifestations in accordance with the structures most affected. Dr. Cohen incidentally mentioned a curious effect of influenza upon the course of other disease. In an old gentleman suffering with epithelioma of the palate, the patch of malignant disease sloughed during an attack of influenza and perfect recovery ensued.

DR. W. C. JARVIS, of New York, presented a communication entitled "Useful Deductions Derived from the Study of a Case of Cicatricial Contraction of the Larynx, Possessing Unusual Clinical Features, with Exhibition of Specimen."

DR. J. SOLIS-COHEN examined the specimen and said that below the constriction there was a normal larynx.

DR. MACKENZIE reported a case in which attacks of dyspnea were caused by a gumma that compressed both recurrent laryngeal nerves. The trachea had its lumen so narrowed above its bifurcation that it was with the greatest difficulty that a fine probe could be passed through the stricture. Tracheotomy was performed, but the dyspnea was not relieved, and after death the condition reported was found.

DR. ASCH suggested intubation and dilatation, with tracheotomy, if necessary.

DR. MORRIS J. ASCH, of New York, reported "A Case of Epithelioma of the Larynx." The patient was a healthy, vigorous man, fond of hunting, and unusually strong and active. He naturally had great irritability of the larynx, rendering examination difficult. The symptoms began with hoarseness and pain. In a few months the characteristic appearances of carcinoma of the larynx developed, with cough and dyspnea. Preliminary tracheotomy was performed, and subsequently the larynx was extirpated. In performing tracheotomy, Dr. Asch recommended the injection under the skin along the line of incision of a few drops of a 2 per cent. solution of cocaine as a local anesthetic, in preference to the employment of ether or chloroform, to produce anesthesia. By this means the operation is made absolutely painless. The patient was relieved, but subsequently had attacks of spasmodic dyspnea, during one of which he died, while suffering from weakness due to influenza.

DR. J. N. MACKENZIE, of Baltimore, presented a communication entitled "The Laryngo-tracheal Neoplasms of Tuberculosis." He recognized the following varieties: (1) That which is ordinarily known as papillary hyperplasia. (2) Papillary, warty growths, having nothing to distinguish them clinically from ordinary papillomata. These may be removed with the cold snare, but in tuberculous neoplasms, operations are deprecated, unless the growth, by its size, encroaches to a dangerous extent upon the lumen of the tube. (3) A solitary form of tuberculous tumor first described some twelve years ago by Dr. Mackenzie.

In the discussion on "The Relation of Disturbance of the Mucous Membrane of the Upper Air-passages to Constitutional Conditions," DR. MULHALL spoke in favor of hygienic treatment of nasal catarrh, and cited two cases in which the symptoms disappeared after the patients, who were pugilists, went into training.

DR. S. SOLIS-COHEN defined struma as a consequence of hypotrophy.

The following officers were elected for the ensuing year:

President.—Dr. S. W. Langmaid, of Boston.

Vice-Presidents.—Dr. Morris J. Asch, of New York; Dr. S. Johnston, of Baltimore.

Secretary and Treasurer.—Dr. Charles H. Knight, of New York.

Librarian.—Dr. Thomas H. French, of Brooklyn.

Member of Council.—Dr. William C. Glasgow, of St. Louis.

It was voted to ratify the action of the Council in transferring the Library to the Surgeon-General's office, where it will be held intact.

After some discussion, the limit of membership was increased from fifty to seventy-five.

Dr. J. H. Bryan, of Washington, D. C., was elected a Fellow of the Association.

The next meeting will be held at Boston, at a time to be fixed by the Council.

AMERICAN PEDIATRIC SOCIETY.

Third Annual Meeting, held at Washington, September 22, 23, 24, and 25, 1891.

(Continued from p. 384)

THIRD DAY—SEPTEMBER 24.

DR. W. P. WATSON read "A Report of a Case of Tuberculous Ostitis of the Hip-joint in a Child Born at Colorado Springs," by DR. JOHN M. KEATING, of Philadelphia. The father was in an advanced stage of pulmonary tuberculosis when the child was born. The boy was six years old and the picture of health. The case is a rare one, as Dr. Keating could find the records of only five or six cases of tuberculous joint-disease originating in Colorado Springs during a period of more than fifteen years, though a large portion of the population of 15,000 are or have been tuberculous.

DR. CHARLES W. EARLE, of Chicago, was not present, and his paper, entitled "Manifestations of La Grippe in Children," was read in abstract by DR. A. SEIBERT, of New York.

DR. J. O'DWYER, of New York, gave an exhibition of laryngeal tubes for the performance of forcible respiration. The instrument consists of a hollow, annulated cone, which is screwed to a curved tube with two openings, the upper being surrounded by a metal shield and the lower being supplied with a rubber tube attached to an ordinary laboratory bellows.

Dr. O'Dwyer stated that the cone could be easily placed in the larynx through the mouth and that the ringed grooving would keep it from slipping. By working the bellows, forcible inspiration could be maintained for any length of time necessary. During expiration the fingers should be withdrawn from the shielded opening. The apparatus was offered as presenting advantages for the treatment of opium-poisoning, and other cases requiring artificial respiration.

DR. WILLIAM OSLER, of Baltimore, read a paper on

"The Association of Congenital Wry-neck and Facial Hemiatrophy," reporting an illustrative case.

Dr. Charles G. Kerley, of New York (by invitation), read a paper on "The Application of Gavage in the Treatment of Uncontrollable Vomiting in Infants."

He advocated the use of a No. 13 Paine's adult nasal feeding-tube as preferable to the catheter that is used in gavage. The operation should be done quickly and predigested food only should be introduced into the stomach.

Dr. A. Seibert believed that in catarrhs of the stomach in babies, a similar condition exists in the mouth and throat. By the use of the tube, food would reach the stomach without receiving bacteria from the upper passages.

Dr. W. P. Northrup, of New York, read a paper on "Scorbutus in Children," illustrated by microscopic slides and drawings. Twenty-five typical cases of scorbutus in children were collected. Great stress was laid upon pain and swelling over the femora, with spongy gums, and the prompt recovery under proper diet as being almost diagnostic. Oranges proved most grateful to the patients.

Dr. Putnam reported that he had observed three cases of scorbutus in children. He thought that proprietary foods and condensed milk had much to do with its production.

Dr. Jacobi, of New York, stated that he had missed the definition of the disease scorbutus. He desired information as to whether bleeding from the gums should be considered a characteristic feature.

Dr. Northrup regarded subperiosteal hemorrhage with some swelling of the gums, with or without bleeding, as due to scurvy. The recovery under anti-scorbutic diet would confirm the diagnosis.

Dr. J. Lewis Smith, of New York, read a paper on "Scarlatinal Nephritis," in which he expressed the view of a microbic origin of the nephritis of scarlatina. At the same time, he cautioned against the risk of exposure to cold in the management of cases of scarlatina.

Dr. Seibert, of New York, believed that in many cases of acute nephritis in the course of scarlatina there was some cause for the disease. He had seen nephritis after acute attacks of tonsillitis and varicella. He advocated treating cases of scarlatina in well-ventilated rooms, even though cold.

Dr. Forchheimer, of Cincinnati, thought that the predisposing influence of scarlatinal nephritis was the virus, and that "catching cold" had little to do in causing the kidney complication.

The President expressed his belief that in many cases of scarlatina exposure to cold was productive of kidney disease.

Fourth Day—September 25th.

Dr. F. Forchheimer, of Cincinnati, read a paper on "The Etiology of Stomatitis Aphthosa," presenting the following conclusions:

Stomatitis is a disease produced by some form of deleterious material in the circulation, which may have its origin in various processes, bacterial or otherwise.

The action of this material is expended upon a nerve or nerves, upon a nerve-center or nerve-centers, and occasions an herpetic eruption that is the aphthous process.

A committee was appointed, consisting of Dr. F. Forchheimer and the President, to consider the nomenclature of the diseases of the mouth in children.

Dr. J. H. Fruitnight, of New York, read a paper entitled, "Perityphlitis in the Young," in which he summarized the treatment as follows:

In cases of chronic or subacute perityphlitis, without a tumor or with a small tumor, an expectant plan of treatment should be adopted. When there is a growing tumor, with or without evidences of suppuration, extraperitoneal incision or aspiration should be performed.

In cases of acute perityphlitis, with threatening symptoms, with tumor, and in subacute cases without tumor, exploratory incision (either peritoneal or intraperitoneal) should be made.

The officers elected for the following year were:

President.—Dr. William Osler, of Baltimore.

Vice-President.—Dr. J. M. Keating, of Philadelphia.

Secretary.—Dr. S. S. Adams, of Washington.

Treasurer.—Dr. C. W. Townsend, of Boston.

Recorder.—Dr. W. P. Watson, of Jersey City.

Dr. W. D. Booker, of Baltimore, was admitted to the Council.

The Society then adjourned, to meet in Boston in May, 1892.

CORRESPONDENCE.

EDITORIAL DEPENDENCE.

To the Editor of The Medical News,

Sir: Reading the excellent editorial in The Medical News of September 12th, on commercialism in relation to the medical press, calls to my mind an incident that in this connection I think is worth relating.

I was very much interested in a series of public meetings held in St. Louis last summer by a paranoic who posed as an evangelist. The interest from a medical standpoint attached to the fact that the phenomena of hypnotism were exhibited in many that attended the meetings.

The editor of a certain medical journal, having learned that I had made some study of the meetings, addressed me a very polite note asking me to prepare a paper upon the subject for his journal at an early date. At the same time he himself wrote a very sensible and vigorous editorial denouncing the meetings as exerting baneful effects upon the mental and moral health of the community.

I at once accepted the invitation and immediately set about writing the paper, so that it might appear at an early date. The next morning I received another note (also a polite one) from the editor, saying that he sincerely regretted that it was necessary to withdraw the invitation he had extended to me the day before, as the publishers of the journal were strongly averse to his editorial and desired that the journal have nothing further to say about the meetings. He assured me that personally he regretted that he would not be able to carry out his original design. *Homo alieni!*

I, however, continued the preparation of the paper, and when it was finished sent it to The Medical News, in which journal it was promptly published (September 27, 1890).

Theodore Diller.

NEWS ITEMS.

A Prize for a Work on Demography.—At the conclusion of the Seventh Congress of Hygiene and Demography it was announced that Dr. Körösi had offered a prize of 1500 francs ($300) for the best work on the subject of demography and its progress in the chief countries of Europe and the United States. Essays, which must be written in English, German, French, or Italian, must be sent by January 1, 1894, to the Permanent Committee of the Congress. The name of the author is to be sent with the essay, but in a sealed envelope. The paper will be examined by an international committee of five statisticians elected by the Permanent Committee, but not necessarily members of it. The prize will be awarded at the opening meeting of the next Congress of Hygiene and Demography at Budapesth.

Zeitschrift fur Orthopaedische Chirurgie Einschliesslich der Heilgymnastik und Massage is the name of a new periodical edited by Dr. Albert Hoffa, of Würzburg, the first number of which has just appeared. The name of the journal indicates the objects to which it will be devoted. It is intended to replace the *Centralblatt für Orthopädische Chirurgie*, hitherto under the editorial care of Dr. Beely, of Berlin. Four numbers (of which from four to six will appear annually) will constitute a volume.

The Fourth Italian Congress of Internal Medicine will be held at Rome, October 19, 20 and 21, 1891. Professor Baccelli will preside. Rossoni and Forlanini will read a paper on The Pathology and Treatment of Diseases of the Stomach; Albertoni and Queirolo will read a paper on The Pathology and Treatment of Auto-intoxications; Patella and Mya will read a paper on The Various Forms of Icterus.

Dr. J. W. S. Gouley will deliver a series of lectures on Diseases of the Urinary Apparatus, on Tuesdays, at 8.30 P.M., beginning October 6th, at the Mott Memorial Hall, 64 Madison Avenue, New York. These lectures, supplemented by clinics at the Bellevue Hospital, will be free to the profession and to students of medicine.

Prof. Maydl, of Vienna, has been elected Professor-Ordinary of Surgery at Prague.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 15 TO OCTOBER 5, 1891.

VOLLUM, EDWARD P., *Colonel and Chief Medical Purveyor.*—Retirement from active service is announced.—*S. O. 211, A. G. O., Washington, D. C.*, September 11, 1891.

CRAMPTON, LOUIS W., *Assistant Surgeon.*—Is relieved from duty at Fort Sheridan, Ill., and ordered for duty at Fort Townsend, Washington, relieving James C. Worthington, Assistant Surgeon. Assistant Surgeon Worthington, on being relieved, is ordered to Fort Thomas, Ky., for duty at that station, relieving George M. Wells, Assistant Surgeon. Assistant Surgeon Wells, on being relieved from temporary duty at Fort Thomas, Ky., is ordered to San Carlos, Arizona, for duty.

KEAN, JEFFERSON R., *Assistant Surgeon.*—Granted leave of absence for three months, on surgeon's certificate of disability.

WELLS, GEORGE M., *Assistant Surgeon.*—Relieved from duty at Columbus Barracks, Ohio, and ordered to Fort Thomas, Ky., for temporary duty, relieving Henry I. Raymond, Assistant Surgeon. Assistant Surgeon Raymond, on being relieved, will report to the commanding officer Fort Robinson, Nebraska, for duty at that station.

DEWITT, THEODORE F., *Assistant Surgeon.*—Granted leave of absence for six months, on surgeon's certificate of disability.

KIMBALL, JAMES P., *Surgeon.*—Relieved from duty at Fort Supply, Indian Territory, and ordered to Fort Clark, Texas.

PATZKI, JULIUS, *Surgeon.*—Relieved from duty at Fort Huachuca, Arizona Territory, on expiration of present sick-leave, and ordered to Fort Supply, Indian Territory

ALEXANDER, CHARLES T., *Colonel and Chief Medical Purveyor.*—Relieved from the duties of Attending Surgeon and Examiner of Recruits in New York City, and assigned to the charge of the Medical Purveying Depot in that city.

FORWOOD, WILLIAM H., *Surgeon.*—Granted leave of absence for one month, on account of sickness.

EWING, CHARLES B., *Assistant Surgeon.*—Will continue on duty as Attending Surgeon and Examiner of Recruits at St. Louis, Mo.

CROSBY, WILLIAM D., *Assistant Surgeon.*—Relieved from duty at Fort Pembina, North Dakota, and ordered to Fort Missoula, Montana, for duty.

REED, WALTER, *Captain and Assistant Surgeon.*—Relieved from duty as Attending Surgeon and Examiner of Recruits at Baltimore, Md., and ordered to Fort Snelling, Minnesota, upon completion of his duties as a member of the Army Medical Board.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 3, 1891.

HALL, J. H., *Surgeon.*—Placed on the Retired List, September 25, 1891.

TURNER, THOMAS J., *Medical Director.*—Placed on the Retired List, September 21, 1891.

BOYD, JOHN C., *Surgeon.*—Ordered to duty on the Naval Medical Examining Board.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE SIX WEEKS ENDING SEPTEMBER 19, 1891.

PURVIANCE, GEORGE, *Surgeon.*—Granted leave of absence for thirty days, August 22, 1891.

LONG, W. H., *Surgeon.*—Granted leave of absence for twenty-two days, August 18, 1891.

AUSTIN, H. W., *Surgeon.*—To proceed to Delaware Breakwater Quarantine Station, as Inspector, August 28, 1891. Granted leave of absence for thirty days, September 3, 1891.

GASSAWAY, J. M., *Surgeon.*—Granted leave of absence for ten days, September 19, 1891.

STONER, G. W., *Surgeon.*—Granted leave of absence for ten days, August 15, 1891.

CARTER, H. R., *Passed Assistant Surgeon.*—To proceed to Cape Charles Quarantine for temporary duty, August 27, 1891.

WHEELER, W. A., *Passed Assistant Surgeon.*—To proceed to Cape Charles Quarantine for temporary duty, August 27, 1891.

BANKS, C. E., *Passed Assistant Surgeon.*—Granted leave of absence for eleven days, September 3 and 9, 1891.

CARMICHAEL, D. A., *Passed Assistant Surgeon.*—Leave of absence extended thirty days, on account of sickness, September 10, 1891.

GLENNAN, A. H., *Passed Assistant Surgeon.*—Granted leave of absence for seven days, August 29, 1891.

GUITERAS, G. M., *Assistant Surgeon.*—Relieved from duty at San Francisco, Cal.; to proceed to New Orleans, La., for special duty, September 14, 1891.

WERTENBAKER, C. P., *Assistant Surgeon.*—Granted leave of absence for thirty days, September 10, 1891.

PERRY, J. C., *Assistant Surgeon.*—To proceed to Evansville, Ind., for temporary duty, September 18, 1891.

YOUNG, G. B., *Assistant Surgeon.*—Granted leave of absence for eight days, August 29, 1891. To proceed to Cairo, Ill., for temporary duty, September 15, 1891.

HOUGHTON, E. R., *Assistant Surgeon.*—To proceed to Vineyard Haven, Mass., for temporary duty, August 29, 1891. Granted leave of absence for sixty days and permission to go abroad, September 18, 1891.

PROMOTION.

GOODWIN, H. T., *Assistant Surgeon.*—Commissioned as Passed Assistant Surgeon September 18, 1891, to date from September 24, 1891.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE PATHOLOGY OF PERNICIOUS ANEMIA.[1]

BY J. P. CROZER GRIFFITH, M.D.,
CLINICAL PROFESSOR OF DISEASES OF CHILDREN IN THE UNIVERSITY OF PENNSYLVANIA,
AND
CHARLES W. BURR, M.D.,
OF PHILADELPHIA.

ALTHOUGH the causes and nature of the various affections that may be called forms of anemia are at present so obscure, yet, for purposes of study, some method of classification of these forms becomes almost a necessity. The difficulty of the subject is perhaps the reason for the number of classifications that have been proposed.

In a previous publication by one of us (*Cyclopedia of Diseases of Children*) anemia was defined as a diminution of the blood *in toto*, or of its albuminous material, blood-cells or hemoglobin, and a system of classification was suggested. We would now propose the following tabular scheme, which is somewhat modified from that in the publication referred to, and which we admit to be imperfect and only provisional:

- Anemia
  - Non-cytogenic
    - Hemolytic
      - Pernicious anemia.
      - Other toxic anemias.
      - Parasitic anemias [some forms].
    - Oligocythemic
      - Parasitic anemias [some forms].
      - Post-hemorrhagic anemia.
      - Anemia from loss of albumin.
      - Anemia from malnutrition.
  - Cytogenic
    - Oligochromemic
      - Chlorosis.
    - Leucocytic
      - Leukemia
        - Splenic.
        - Lymphatic.
        - Medullary.
    - Non-leucocytic
      - Simple constitutional anemia
      - Splenic anemia.
      - Lymphatic anemia.

The terms "primary" and "secondary" are best avoided altogether, as they have so frequently been misapplied. "Cytogenic" and "non-cytogenic," though not interchangeable with them, are certainly preferable.

In the light of all that has been written, one might be disposed to regard the foregoing tabular classification as arbitrary and unnatural; and the opinion might be, as it has been, advanced that there are few sharp lines of demarcation between the various forms of anemia. Thus, it has been maintained that chlorosis and pernicious anemia are closely allied, and several instances have been reported in which a transition from one disease to the other had taken place. Luzet has published a most striking instance of this apparent transformation. Leukemia was claimed by Wood twenty years ago to be nearly related to, or perhaps identical with, lymphatic anemia, and there have been a few cases reported, as, for example, by Mosler and Fleischer and Penzoldt, in which the latter disease seemed to be transformed into the former. Pernicious anemia has in some instances appeared to be closely allied to leukemia. Musser, for example, published a case in which the blood at one time indicated the existence of leukemia, though the condition later appeared to be one of pernicious anemia; and Leube and Fleischer have reported cases apparently the converse of this.

In spite of these seeming objections to the existence of different varieties of anemia as distinct and independent diseases, we lean to the opinion that at least many forms are entirely separate entities. We certainly take the ground held by the majority of physicians that chlorosis and pernicious anemia are widely separated from each other, and that the latter has certain peculiarities that sharply distinguish it from most other varieties.

Turning now more directly to the subject of this contribution—the pathology of pernicious anemia—only the briefest review can be given of some of the different theories that have been held. Various propositions have been advanced, which have met with no general acceptance. Among these are the claim of Klebs, Frankenhäuser, Eichhorst, and Petrone that a species of cercomonas, or that micrococci, exist in the blood. The belief of Kjellberg, that the disease is an infectious one, belongs to the same category. By far the majority of writers, however, have for years regarded pernicious anemia as a cytogenic disorder, a disturbance of the production of red blood-cells. Wood, in 1871, described the red condition of the marrow of the long bones, and Pepper thought that this might be the starting-point of the disease; while Cohnheim, a year later, was inclined to view this condition as the specific cause. According to this theory, the disease is a medullary anemia, or, as some have called it, a medullary form of Hodgkin's disease. The probability of the truth of this seemed great, since in cases of pernicious anemia no important post-mortem

[1] Read at the meeting of the Association of American Physicians in Washington, D. C., September 24, 1891.

anatomical changes could be found, except the hyperplastic alteration of the bone-marrow. Later, however, doubt began to arise as to whether the medullary changes had any etiological connection with the disease. Cases of pernicious anemia were described in which no such alteration existed, and Neumann, Litten and Orth, and others, found that this hyperplastic change takes place in other affections as well. Thus, in animals such a red marrow may be produced by repeated bleedings. (Bizzozero, Salvioli, Litten, Orth.) Eichhorst and others entertain the belief that in pernicious anemia the condition of the bone-marrow is purely secondary, the hyperplasia being only the evidence of the effort on the part of the hemogenetic bone-marrow to supply by excessive production the great lack of corpuscles in the circulation. Mott echoes the same sentiment.

Still another view has been maintained by several writers (Russell, Henry, Mackenzie, Purser), somewhat of a modification of that of the cytogenic nature of the disease. It is that the affection is an altered and imperfect, rather than insufficient, cytogenesis, by virtue of which the red blood-cells are so badly made that they break down very easily. Russell is perhaps the strongest supporter of this view, and reports a number of observations opposed to the theory (presently to be discussed) of the purely hemolytic nature of the disorder.

In this connection it may be stated that the alteration in shape of the corpuscles seen in pernicious anemia is not at all characteristic of the disease. We have seen this alteration well marked in cases of extreme anemia of other nature. The increase in the size of the corpuscles, and the occurrence of nucleated red blood-cells in the marrow and blood, are also very probably of a secondary nature, since they are not confined to this disease alone.

It would seem, then, that there is no change of the blood itself, or of the cytogenic tissues, that justifies the assumption that pernicious anemia is a cytogenic disorder. At any rate, it is not proved that there is any disturbance of blood-formation, and, by the laws of logic, the burden of proof rests upon those who assume that such a disturbance exists.

Omitting for the time the discussion of the published views that would ascribe at least some cases to the presence of bothriocephalus latus, or to atrophy of the gastric mucous membrane, we must, then, take up the consideration of the affection as one of a hemolytic nature. This theory has been brought into prominence by the able researches of Hunter, though his investigations were not the first upon the subject. Quincke, in 1876, in three cases of pernicious anemia, found a great increase in the amount of iron in the liver, and in 1877 Rosenstein confirmed this observation. Later, as a result of their studies, Quincke and Peters concluded that this increase is a constant and characteristic feature. Peters found that the increase might occur to a varying degree in other disorders. He attributed it, as did Quincke, to an excessive destruction of red blood-cells. Stahel, too, in a case of pernicious anemia, found a very great increase in the amount of iron in the liver, but none in the spleen.

These investigations seemed to be almost forgotten and their bearing not appreciated, until Hunter published his observations, which are too fresh in the minds of all to allow of more than the briefest reference. Hunter examined the viscera in a number of cases of pernicious anemia, and found a remarkable deposition of iron-pigment in the livers of all of them. The iron existed in a granular form within certain of the hepatic cells, viz., those of the outer and middle zones. In certain other diseases, as in cirrhosis of the liver, malaria, and chronic venous congestion, at times he found an increased amount of iron, but never to such a degree, and never exhibiting the peculiar arrangement that he regards as characteristic of pernicious anemia. He regarded the granular matter as a decomposed hemoglobin, since hemoglobin itself will not answer to the reactions for iron that he employed, and which will presently be described.

In some cases he was able to discover the same pigment in the cells of the renal convoluted tubules. He found no increase of iron in the spleen in any of his cases. He explains this on the ground that, though the hemoglobin is set free in the spleen or between it and the liver, it remains hemoglobin until it reaches the latter, and consequently gives no characteristic reaction for iron. The urine of his patients was of a dark color, due to the presence of a large amount of pathological urobilin, which is probably a still further alteration of hemoglobin, through the medium, however, of the bile-pigments. In one carefully-observed case the urine contained an increased amount of iron, together with two ptomaïnes, never produced except by the action of certain microörganisms.

He concludes, therefore, that pernicious anemia is the result of an excessive destruction of blood in the portal circulation, and that this destruction is due to the absorption from the alimentary tract of certain ptomaïnes produced, perhaps, by the action of microörganisms.

By a series of experiments upon animals he endeavored to produce artificially in them the symptoms and pathological appearances of the disease. For this purpose he introduced into the circulation various hemolytic substances; but found that though some of them were capable of producing hemoglobinuria, one, toluylendiamine, by its special action upon the blood and the liver, was efficient in producing a con-

dition of this organ identical with that seen in cases of pernicious anemia.

Other observers have since maintained the hemolytic nature of pernicious anemia, corroborating the statements made regarding the condition of the liver found post-mortem in this disease. It is true that, among these, Russell, while admitting the excessive hemolysis that takes place in the disease, believes, as we have said, that this depends upon a defective hemogenesis, and claims, from his study of the liver and spleen in forty-four cases of other disorders, that the excessive iron-reaction is not found in pernicious anemia alone. He has found an increase in the amount of iron in the spleen also in one case of pernicious anemia, as well as in a number of cases of other disorders. Mott seems to incline to the view that the disease depends upon the formation of some poison or ferment connected with microörganisms. In one case he found no iron in the spleen, though in another a deposition of pigment was observed.

Our own observations have little or nothing new to offer, and are of value only in so far as they may confirm or oppose the meager data as yet obtainable toward a more perfect understanding of this still very obscure subject. They have been confined, for the most part, to the question of the presence or absence of iron in the liver in pernicious anemia and in other diseases, particularly forms of anemia. We have also in progress a series of experiments upon animals; but, as they are not yet completed, the results will be reserved for future publication.

The reagents that we have employed have been those recommended by Hunter, Peters, and others. Sections of liver from specimens hardened in alcohol were, after washing in water, immersed for from five to fifteen minutes in a rather strong aqueous solution of potassium ferrocyanide; then, without washing, these were placed for an equal time in a weak aqueous solution of hydrochloric acid. The altered blood-pigment characteristic of pernicious anemia contains iron in a form that, treated in this way, develops the well-known Prussian-blue reaction, and becomes visible as granular matter of a blue color within the hepatic cells. The sections can now be passed through the necessary steps preparatory to preservation in balsam. The iron may also be rendered visible by immersing the sections in a freshly prepared solution of ammonium sulphide, by which means the sulphide of iron will be produced, and will appear as a heavy, black precipitate within the cells. We have, for the most part, used the treatment with potassium ferrocyanide.

The livers from three cases of pernicious anemia have been studied: the first from a patient of Dr. Morris J. Lewis, the second from a case occurring in the hospital of the University of Pennsylvania, and the third from a patient of Dr. J. H. Musser. It is sufficient here to say that examinations of the blood were made in all of them, and that, in this as in other respects, the symptoms were those characteristic of the disease. We shall confine ourselves to the condition of the liver with regard to the presence of iron.

Case I.—The hepatic cells of the outer and middle zones of the lobules were very full of iron-pigment, the amount constantly diminishing in the inner zone as the central vein was approached, so that in the greater number of the cells of this zone there was no appreciable amount of iron present. The iron was in the form of minute, irregularly-shaped granules. These, closely aggregated, seemed to form a continuous band running along the center of the irregular bands of hepatic cells. No pigment could be found in the capillary bloodvessels or bile-ducts. Besides the iron-pigment, a granular blood-pigment of a yellow color, such as is frequently visible in sections of liver, was discernible in parts of the sections, chiefly in the region nearest the central vein. The wall of the central vein was stained a blue-green color in the specimens treated with ferrocyanide, but no granular matter could be detected in it.

Case II.—The appearance of the liver was almost identical with that of the preceding case. In this case, too, there was noticeable the presence of a considerable amount of yellow pigment, chiefly in the inner zone of the lobule, and which was not affected by the potassium ferrocyanide.

Case III.—The condition of the blue-stained pigment in this case was almost identical with that in the preceding cases, though perhaps the amount was not so great.

The spleen was examined in the first case, and found to contain no increase in the amount of iron. The kidney in the first case exhibited a slight deposit of iron-pigment in the cells of the convoluted tubules. In the second case no such deposit could be found.

As check observations upon these, we have examined livers from a large number of cases of different diseases, making an especial effort to obtain preparations from patients affected by some disease attended with anemia. It would unnecessarily occupy time to detail the results of these investigations. It is sufficient in general to say that in not a single instance was the characteristic pigment found in amount at all comparable with that seen in pernicious anemia, nor did it present the characteristic arrangement. In most cases it was either entirely absent, or present in very small quantity. It is naturally to be expected that at least a small amount of pigment would normally be found in the liver, if, as supposed, this organ is the normal seat of blood destruction.

A few of the cases deserve a somewhat fuller reference.

1. In a case of cancer of the liver in which the connective tissue greatly preponderated, large masses of yellowish pigment were observed in carmine preparations. These were irregularly scattered throughout the sections, either among the liver-cells or in the connective tissue of the growth. They were apparently the result of hemorrhages. Sections treated with potassium ferrocyanide exhibited these masses stained blue.

2. On the other hand, a case of emphysema, with dilated heart, exhibited, as might be expected, considerable yellowish pigment, situated chiefly in the cells about the central vein. When treated with potassium ferrocyanide no iron reaction whatever was discoverable.

3. Another very interesting specimen was from a case of pernicious malaria, which had been under the care of Dr. George Dock, then of Galveston, Texas. The patient had presented evidences of excessive hemolysis occurring in the general circulation, as shown by the presence of hematuria, and probably of hemoglobinuria as well. The number of red blood-corpuscles was greatly diminished, and toward the end of life leucocytosis developed. The sections of liver in this case exhibited a large amount of deep-black granular pigment, the histological arrangement of which we shall not enter upon, further than to say that no such distribution was present as in cases of pernicious anemia. Sections of liver treated with potassium ferrocyanide exhibited a considerable amount of iron-pigment in the hepatic cells. The black pigment was entirely unaffected by the reagent.

Other cases might be cited in further illustration of the point we wish to emphasize, viz., that various sorts of pigment may occur in the liver, only some of which give the ferric reaction. The black pigment of the third case gave no such reaction. In each of the first two cases a yellowish pigment was visible in carmine preparations. When treated with the ferrocyanide this became blue in the first case, but was unaffected in the second. As a rule, the yellow pigment, seen so often in livers, does not react to the ferric test. In two of the cases of pernicious anemia reported, this pigment was present in the inner zone, and the blue iron-pigment in the outer and middle zones.

This variation in the nature of the pigments is in accord with the results of the researches of Neumann, who has shown that there are two forms of pigment in the body; the one, which he denominates "hemosiderin," giving an iron reaction, and the other without such reaction.

4. In connection with the last case, in which hemolysis occurred in the systemic circulation, sections from the liver of a case of Dr. B. C. Hirst's were of extreme interest. This was an instance of infectious hemoglobinemia of the newly born (often, though we think unfairly, called Winckel's disease). In this instance the liver exhibited no iron at all. The kidney exhibited a decided blue-green tinting of the convoluted tubules, and in some parts of the loops of Henle, though the Malpighian tufts and the collecting tubules were almost entirely free from it. Nowhere, however, was there any evidence of any actual deposition of granular pigment, even when high amplification was employed.

We have already stated that a deposition of granules was present in the kidney of the first case of pernicious anemia reported.

It would therefore appear from the third and fourth cases, the first of which was probably an instance of hemoglobinemia, and the second certainly so, that hemoglobin set free in the systemic circulation is not deposited in an altered form in the liver nor reaches the kidney in such a condition that it is found there in a characteristic granular form. On the other hand, in pernicious anemia hemoglobin set free in the portal circulation does become altered in a peculiar way in or before reaching the liver, so that it is either deposited there, or, if in too great excess to be disposed of entirely there, passes into the systemic circulation in such a changed form that it is not excreted by the kidney as hemoglobin, but as some other substance (pathological urobilin), while some of it is deposited in the renal cells in a chemical form similar to the granular matter in the liver. The reason for this difference between systemic and portal hemoglobinemia does not seem clear, nor can we explain why the spleen occasionally contains pigment in pernicious anemia and at other times not.

Besides conditions in which hemoglobinemia occurs, those disorders commonly ranked as "diseases of the blood" were of especial interest to us, particularly in view of the claims that have been advanced that they were closely allied to pernicious anemia, if not, indeed, capable of being transformed into it.

5. Sections of the liver from a typical case of lymphatic anemia were treated with potassium ferrocyanide. The lymphatic tissue present was entirely free from iron, as were also the hepatic cells, except those upon the extreme periphery of the lobules. Here a circle scarcely wider than the diameter of one or two cells exhibited a decided deposit of iron-pigment, though not at all comparable in amount to that seen in pernicious anemia.

6. Sections of the liver from a case of leukemia were entirely free from iron.

It appears therefore that there is no likeness between pernicious anemia and at least two of the cytogenic anemias.

7. Another interesting case exhibiting a marked increase of the amount of iron in the liver was a very unusual one of complicated ulcerative endocarditis, in which during the life of the patient there had been reason to believe that abnormal destruc-

tion of blood had been in process in the general circulation. Nevertheless the pigment was deposited in irregular foci entirely without reference to the structure of the lobules. The amount of iron by no means equalled that in the specimens from pernicious anemia.

Livers were examined from several cases of Bright's disease and of phthisis and no iron found. The liver also from a case of cancer of several of the abdominal viscera, in which the anemia and cachexia had been exceedingly well marked during life, failed to exhibit any iron. A case of anthrax and one of gumma of the liver were without iron.

Besides livers from persons not anemic, we have thus examined the organ in a number of varieties of anemia, viz., hemolytic anemia (pernicious anemia, pernicious malaria, infectious hemoglobinemia); anemia from loss of albumin (Bright's disease); anemia of malnutrition (cancer, phthisis); leukemia; lymphatic anemia. In no instance was iron found in the liver to the extent or with the characteristic distribution seen by us and reported by others in cases of pernicious anemia.

Conclusions.—Is it justifiable to consider pernicious anemia a distinct disease, and if so, what is its nature? Our experience seems to corroborate the view that there is in this disorder a deposition of iron in the liver unlike that observed in any other, and that—as a deduction from this and certain other conditions found — pernicious anemia is a form of hemolysis. It is therefore a non-cytogenic anemia. Whether there exists any defect in the formation of the corpuscles that predisposes to their destruction when the proper destructive agents are brought to bear, it is as yet impossible to determine. There seems to us no good reason for this assumption.

In one light it might be claimed that the disease, broadly considered, need not be a unity—that is to say, there is no reason why but a single poison should produce the characteristic destruction of blood. For example, a condition closely resembling pernicious anemia in the pathological changes may be produced in animals, as Hunter has shown, by the administration of certain hemolytic agents, such as toluylendiamine. This artificial disease is in one sense, in fact, a pernicious anemia. Pyrodin, also, has produced extreme anemia in man, as was shown by the case of Renvers, in which the number of red blood-cells per cubic millimeter fell in three days from 4,000,000 to 2,800,000.

The cases of pernicious anemia reported as cured by the expulsion of tapeworms probably owed their symptoms to the absorption from the intestine of some poisonous product produced by the worm. Had the patients died, it is at least possible that an increase of iron in the liver would have been found, particularly as the poison absorbed would have been acting within the portal circulation. These, too, might in a wide sense be called instances of pernicious anemia. Again, the cases of what seemed to be pernicious anemia due to atrophy of the gastric mucous membrane were probably the result of the absorption of some product of the decomposition of food in the stomach, since dilatation of the stomach, with the consequent putrefactive changes, is a characteristic symptom of atrophy of the gastric mucous lining. The anemia is certainly not one of inanition. A very analogous condition is that reported by H. Meyer, in which the most characteristic symptoms of pernicious anemia were promptly relieved by a single washing of the stomach, doubtless thereby removing some poisonous product of decomposition which was being absorbed and was destroying the blood-corpuscles.

As we have said, all these varying conditions might be considered instances of pernicious anemia taken in a broad sense of the term. Are we then to consider this disease as not having an individual existence on the ground that it may have these various causes? Should it possibly be looked upon as a symptomatic condition of these different affections? We think not. The fact of the existence of tapeworm or of gastrectasia with consequent fermentation or of other conditions *without* the symptoms of pernicious anemia, indicates that its peculiar complex of symptoms is not a necessary sequence to their existence. Pernicious anemia is rather to be looked upon as a distinct disease which may arise whenever some certain poison is present and is absorbed. When its symptoms are present in connection with the occurrence of tapeworm or other of the diseases referred to, it is to be regared as a *superadded* but distinct disease. In like manner, an apparent change of chlorosis into pernicious anemia would be no proof of the relationship of the two. There is no reason whatever why there should not be rarely engrafted upon chlorosis, or upon any other blood-affection, or in fact upon any disease whatever, a new condition, a distinct disease, which may chance to be a destruction of red blood-cells. This is very different from the view that has been expressed that pernicious anemia is a final stage of any other form of anemia.

Regarding chlorosis, we are believers in the distinctive character of the affection, and view it as in all probability of cytogenic origin—a fault in the proper formation of red blood-cells—as a result of which there is a deficiency in the amount of hemoglobin present. As there is no evidence of destruction of blood in chlorosis, one is almost forced to the conclusion that it is a disturbance of hemogenesis, whatever the cause of this disturbance may be.

If one wishes to refuse to pernicious anemia the

title of an independent disease because there may be more than one toxic agent that can act in exactly the same manner and produce similar symptoms, no absolute objection can be made. The disease is secondary in so far as it is hemolytic. In addition to the absorption of certain ptomaïnes, it is probable, and reasonable too, that pyrodin and certain other antipyretics, and possibly also other drugs capable of destroying blood, would produce the characteristic symptoms and post-mortem changes, should their action be continuously exerted for some time. It seems better, however, to regard all these cases, including the anemia seen in atrophy of the gastric tubules and accompanying bothriocephalus latus, as other and different forms of hemolytic anemia.

It would then be a just conclusion to regard pernicious anemia, in the ordinary sense of the term, as a truly independent affection, which may be defined as an extreme and increasing anemia, without marked loss of flesh, not directly secondary to any anatomical lesion or to the presence of any parasite, but probably due to the entrance into the portal circulation from the intestine of some certain hemolytic agent, the origin of which is unknown, but that is possibly of the nature of a ptomaïne.

A PLEA FOR THE ASSOCIATED CULTIVATION OF SPECIAL EXPERTNESS IN MEDICINE.[1]

By G. BETTON MASSEY, M.D.,
INSTRUCTOR IN ELECTRO-GYNECOLOGY IN THE PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE HOWARD HOSPITAL, TO THE DISPENSARY FOR WOMEN, ETC.

GENTLEMEN: It is with much pleasure that I pronounce the American Electro-therapeutic Association an accomplished fact. Organized amidst many expressions of doubt on the part of occasional workers in electro-therapeutics, it has already met with a reception that insures a career of active usefulness in the near future, and has enrolled a membership with which it is an honor to be associated. It is of this infant organization that I wish to speak to you, of its reason for being, and of its responsibilities, as an illustration of an important means of advancing the sum of human happiness by exalting the skill of practical workers in a certain field of medicine.

Among the special societies of the day none occupies the peculiar position of an electro-therapeutic association. None other is devoted to the study of a single therapeutic agent, or has a membership embracing workers in so considerable a number of specialties. Narrow in one sense, it is in another sense nearly as broad as medicine itself, since there are but few departments of medical work unrepresented in our present program.

But such an association as this differs in a more important particular from other special societies. Whilst, like them, composed of students of a certain subject, the members of this Association are not exclusively devoted to the questions to be considered here. They are rather a company of special workers in diverse departments, seeking greater expertness in the administration of a certain therapeutic force. That the progress of the healing art as a whole has made it incumbent on certain of its practitioners to devote special study to this one therapeutic force, is a sign that medical art is partaking fully in the general advance of science, which demands the services of experts in every field. At the very inception of this Association I therefore wish to lay stress upon a proper idea of its reason for existence. Let no one suppose that we are here to uphold or study any exclusive system of treating disease. We are here merely as experts and students desiring greater knowledge of a favorite art, and I trust that you will debar from membership any person who does not give adherence to medical knowledge as a whole, and make proper use of any and all agencies of value in the cure of the sick.

A necessity of the times, as evidenced in recent changes in medical education, is the enforcement of a broader culture among physicians. There is no doubt that this will tend to increase the membership of special scientific associations, but it must not be forgotten that these organizations themselves arise from a more peremptory assertion of the natural law of supply and demand. There is always a vast difference between the merely cultured man and the expert: the one delights us, but to the other we turn for the advancement of human knowledge and for real help in the crises of life. As the community increases in intelligence this seeking after experts will doubtless become more pronounced in all departments of human service of man to man above the mechanical work of the common laborer, and we may well conclude that the healing art will partake fully of the benefits of this natural selection. A demand for experts creates a demand for expert training, an educational thoroughness that is at present well known to be impossible in our medical colleges. To meet this emergency there have, fortunately, grown up of late two agencies: the one, the post-graduate college, to teach ordinary skill; the other, the special society, which bears to yet unconquered disease the relation of a well-disciplined army to the borders of a hostile and unexplored country. Thoughtless men neglect both, but the wise see in such agencies the means of advancing personal knowledge of the practical needs of their work. It is to be hoped that their establishment

[1] Being the Presidential Address delivered at the first annual meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

will quicken an evolutionary process in our profession that will finally develop it into an ideal organization of skilled interdependent workers; where each member, profoundly cultured in the universal sciences of medicine, will yet confine his work to that branch in which he is skilled. Such a specialism in parts and members is Nature's ever-present pattern for our admonition and imitation. When such a time has arrived, the fortunate objects of our professional care will receive that highest skill to which they are in justice entitled, and which at the present moment they rarely receive.

In this hoped-for Utopia of professional conscientiousness, skilfulness, and modesty, I am sure it will be impossible to duplicate the position of a recent correspondent, whose apparently careful and exhaustive article on the electrical treatment of uterine fibroids in a recent journal led me to request him to discuss the subject at this meeting. He replied that he knew almost nothing about electro-therapeutics—a fact that I had already suspected. So remarkable an admission of ignorance from a person assuming the position of trying and judging, causes one to wonder if he had been equally frank with the thirty or forty patients mentioned in the paper before undertaking their treatment. Well might we beg a modern addition to the ancient Hippocratic oath—in which the medical man swore not to "cut for stone"—an addition that would compel the non-expert to forever refrain from assuming responsibilities for which his training has been insufficient, and that would have rendered impossible that recent crop of jacks-of-all-trades who have "tried electricity." Of all the enemies of scientific research in electro-therapeutics, these are the worst. Not even the pure quacks do the harm of these Pharisees, who, when their patients demand it, blunderingly attempt to use a remedy in private, and publicly condemn it on the strength of such evidence. Such mistaken attempts at medical omnipotence should be frowned upon as savoring of a crime toward both the patient and the remedy.

The organization of a national Electro-therapeutic Association crowns the full emancipation of this remedy from the thraldom of quackery. Neglected by the profession in the years that elapsed between the memorable medical experiments of Franklin in this city and the discovery of the dynamo, the marvellous triumphs of electrical engineers have at last aroused medical men to the need of discarding ideas, methods, and appliances that preceded the electrical new-world discovered some fifteen years ago. The assumption of new methods in electro-therapy has been extremely slow as compared with the industrial revolution that has already altered the face of civilized communities, but it is to be hoped that this body will be a powerful stimulus to the spread of scientific work in America.

Science, however, is but another name for truth, and in touching upon the objects of an Association for the study of a force so well harnessed by natural law as electricity, it is evident that in our discussions truth must ever be held as paramount. Armed with laws that unlock the hidden power of this force over certain diseases, we are also equipped to demonstrate its utter uselessness in others by the application of an agnosticism that refuses to believe anything unless proven. But in clearing away the rubbish of unproved statements that make up so much of our archaic electro-therapeutic literature, we shall by no means weed out the entire field of so-called medical empiricism. It is not alone in electro-therapy that the careless dicta of professional book-writers have told us that such and such an agent is good for such and such a disease, without specifying the conditions that in actual practice are necessary to save us from failure. Read any classical work on general therapeutics that is ten years old, and see the blind empiricism from which all therapeutics has been evolved. There should be no nobler work for this Association than sifting the ancient claims for electricity, particularly in certain diseases of the nervous system, and establishing either their falsity or the conditions under which they are true. All remedial agencies are environed with limitations that vary with the dose used, the condition of the patient, etc., and this is particularly true of the one under consideration, which, in turn, may be a calmant, a stimulant, an absorbent, a solvent, and a destructive agent. Here a hundred possible variations must be scanned to get the possible road to success, and hence this society is an eminently technical one. The broad question of the value of electricity in a certain disease should be subordinated here to exact data of the kind of current used, the dose, the duration and frequency of treatment, and the nature and position of the electrodes. All these should be specified before a claim is made that this agent is worthless in a given disease, since a different combination of the same factors and conditions might have led to success. Similarly, the conditions giving rise to the successful treatment of a disease should be specified with equal minuteness in order that others may find it possible to verify and duplicate our results.

It is for such work that the American Electro-therapeutic Association is needed, and badly needed. I do not decry the presentation of electrical papers to our various general and special societies, but it is in the nature of such presentations that they must assume the polemical attitude of enthusiastic indorsement or wholesale condemnation of general facts—must deal in glittering gener-

alities—in order to be other than tedious to their audiences. Such papers do little to advance our knowledge of a special subject, and the speakers that follow are rarely capable of intelligently discussing those whys and wherefores of success and failure that I trust you will at these meetings bring into prominence.

Among the questions that demand this critical investigation may be mentioned the whole subject of the use of electricity in organic nervous diseases and in the neuroses. We are here handicapped, of course, by a still imperfect knowledge of many pathological conditions underlying these diseases, yet I think it is even now possible to make a broad division of the electro-therapeutics of nervous diseases into two groups, the one acting by transferred physiological processes through the agency of the spinal and sympathetic systems, and the other acting by virtue of a direct passage of lines of flow through—or by a polarization of—the primary or secondary seats of the disease. The indirect method is, unfortunately, the more common, since we are restricted to it frequently by the deep situation of the diseased areas, and in its various applications we are limited in progress by the limitations of these physiological carriers of our remedy. We are here in much the same position as in prescribing drugs, whose action is generally limited by the circuitous routes of absorption and circulation. It is doubtless in the method of direct action that electricity will yet make its greatest advances in the treatment of nervous diseases: a method that involves the possibility of concentrating a sufficient density of lines of force through a diseased area to accomplish an alteration in its nutritive condition. This is yet an almost virgin field in neurology, depending somewhat upon improved methods of conducting efficient currents through the dermic surface; and, in estimating the possible future value of strong currents thus scientifically conducted to the actual seats of disease, I can conceive of but one organic basis of disease as absolutely and at all times unpromising and resistant, namely, that due to living germs.

Of the work before you in considering the value of electricity in gynecology I need not speak at length. This is regarded as a most important question in every gynecological society in the world, and while we are fully justified in considering its relative value as compared with other means, we shall have a greater opportunity to discuss the many technical questions that belong to the subject. Here, indeed, is material alone sufficient for a society. The exact methods used by men of large experience in the various diseases of women are living questions that come home with force to anyone who essays this work. Such things are rarely well shown in books because of the changing extent of our yet imperfect knowledge. Owing to the many possibilities of direct treatment in gynecology we have, nevertheless, already accumulated a most respectable series of exact therapeutic facts, with many useful rules deducible from them, and in the great activity now characterizing this branch of electro-therapeutics an almost daily advance in our knowledge is inevitable. It is in this department of diseases of women that electricity as a remedy has encountered its first real and bitter opposition from non-users in the profession, but we should remember that here its greatest value as a curative agent is becoming conspicuous, for "the blood of martyrs is the seed of the faith." To its good work of restoring health and function by combating disease processes has been added the labor of combating unwise surgery, which, in a laudable effort to perfect a useful technique, has sacrificed thousands of patients and parts of patients on the altar of harsh experiment.

Among other branches of the work great interest attaches also to the electro-therapeutics of visceral and circulatory diseases; of dermatology; of strictured canals and orifices; and of the naso-pharynx. Each of these questions will be infinitely better understood when discussed by experts, and cannot fail to be placed on a higher plane of scientific exactitude by each one of our annual gatherings.

As important accessories to these advancements in our ability to cure and control disease, certain questions of detail common to all this work demand our attention. This Association should take action on the important matter of securing a uniform and reliable calibration of our milliampère-meters. Many of the instruments supplied to the profession are improperly graduated, and others soon fail to read correctly through imperfect construction. This is surely a matter of greater importance than the correctness of the scales used in trade, over which the State wisely maintains a supervision. In the absence of government assistance in verifying our instruments some practicable substitute should be devised. Our faradic batteries are also yet far from perfect, besides being devoid of intelligent means of graduation, and I trust that you will take early steps to bring this somewhat old-fashioned instrument up to the high character demanded by modern work.

Such, in briefest language, are some of the reasons why special workers should meet in occasional conclave. To sufferers from the affections coming under our care this meeting is fraught with high consequences. Unless we can go back to them with an added power over disease our coming here is bereft of its highest value, for in the presence of human suffering we can recognize utility alone as our measure of results.

SYPHILITIC SPONDYLITIS IN CHILDREN.[1]

By JOHN RIDLON, M.D.,
OF NEW YORK.

On October 15, 1886, before the Section on Orthopedic Surgery of the New York Academy of Medicine, I read a paper entitled "Syphilitic Joint-disease in Children," and exhibited patients with the disease located at the ankle, knee, hip, wrist, and finger-joints, and in the spine. All cases had been treated by immobilization, and each case had been experimentally observed for varying periods with and without anti-syphilitic medication until the diagnosis had appeared to me to be conclusive, when each was finally placed upon the treatment that was continued until its final cure.

Notwithstanding the fact that these cases differed somewhat in their clinical aspects from ordinary tuberculous disease when located in the various joints; that nearly all gave a clear history of syphilis in the parents, and at some time in their course had presented other well-recognized syphilitic lesions; that while under the anti-syphilitic medication all had shown marked improvement, which they had failed to show under immobilization alone—notwithstanding these things, no one of the orthopedic surgeons present was willing to admit that the joint-lesions presented were syphilitic, but insisted that they were all of the ordinary tuberculous variety. One eminent man went so far as to say that in his extended experience in the treatment of chronic joint-disease he had frequently observed the curative effects of mercury upon tuberculosis. Indeed, so unanimous and positive was the opinion among my colleagues that there was no such thing as syphilitic joint-disease that I had not the temerity to publish my paper. However, five more years of observation have not only confirmed the views that I then held, but I have been led to believe that syphilitic joint-disease is of much more frequent occurrence than I then supposed, and I have ventured once more to bring forward a portion of the subject for consideration.

All of my observations have been among children in whom there was no evidence of a primary syphilitic lesion, and in very many I have sooner or later been able to trace a syphilitic taint in one or both parents; on this alone I have felt justified in assuming that the disease was inherited. It should be known that no microscopic examination has been made by me to demonstrate the presence of the syphilitic bacillus or the absence of the tubercle bacillus, and that I do not profess to know what relation exists between tuberculosis and syphilis in the second and third generation. Clinically, however, there can be no doubt of their relation. Ricord and Maisonneuve taught that syphilis, especially in the tertiary form, could be transmitted to the offspring as scrofula, phthisis, and rhachitis; and Bumstead and Taylor (*Venereal Diseases*, fourth revised edition, p. 735) say: "Syphilis is generally transmitted only to the second generation; exceptionally, in case of excessive activity of the disease in the first inheritor, it may appear in the third generation."

The diagnosis of syphilitic joint-disease in a child does not necessarily imply an accusation of one or both parents, for, if "one-third of all children procreated of syphilitic parents are dead-born, and of those born living 24 per cent. die within the first six months of life," and if "in case of infection of both parents the disease is likely to be transmitted in an extreme form, resulting in death of the fetus, or in the early manifestation of symptoms," it would not be unfair to conclude that some cases of syphilitic joint-disease in children that appear as late as from the tenth to the fifteenth year, like some other syphilitic symptoms, may have been transmitted from the original sin of a grandparent, the parent having escaped, or at least having never been conscious of any syphilitic manifestation. Bearing upon this, let me again quote from Bumstead and Taylor: "These cases of late development are rather rare, although we have seen fully two dozen in which there were such lesions at the third, sixth, eighth, twelfth, fifteenth and twentieth years. . . . . Besides the cutaneous and visceral lesions of the first year or two, other syphilitic affections are frequently observed. In many cases the diaphyso-epiphyseal lesions of the bones appear during uterine life, and run their course in the early months of the disease, possibly relapsing at a later period; or they may appear for the first time during the first year of life. From the fourth up to the twentieth year the shafts of the bones may be affected by periostitis, and joint-affections often occur. . . . . Dactylitis is usually observed in very young children; it may also occur as late as the twentieth year." Notwithstanding this teaching, and that of numerous English, French and German observers, syphilitic joint-disease in children has no place in the orthopedic literature of this country.

One gentleman, who had the opportunity of examining all of the patients reported upon in my former paper, said that he did not consider any of them as cases of syphilitic joint-disease, but as "tubercular joint-disease modified by inherited syphilis." It has seemed to me that it would be a more correct expression of the condition, provided the tubercle bacillus can be demonstrated to be present in these lesions, to call them syphilitic joint-disease modified by tuberculous infection. It

[1] Read before the American Orthopedic Association, at Washington, D. C., September 24, 1891.

is well recognized that traumatic joint-affections, if neglected in treatment and prolonged by use, readily become infected with the tubercle bacillus; and it may not be an unfair assumption to claim that the bone and joint-lesions due to syphilis in the progenitors, when neglected or refused remedial medication, also readily become the seat of tuberculous infection. The symptoms, prognosis, and treatment of these cases are quite different from the cases primarily traumatic or tubercular.

The following case, which is not an imaginary one, is instructive:

A young child, of a clean mother, but whose father at the time of the conception was suffering from tertiary syphilis, developed chronic disease of a joint; he was treated with anti-syphilitic remedies and kept in bed, but without mechanical restraint; and recovered after a few months, with a joint normal in all its appearances and functions. Subsequently he developed a chronic disease in another joint, which presently exhibited the same symptoms and signs that had been observed in the former joint-affection. He was now subjected to mechanical treatment without medication. An abscess appeared and was allowed to open spontaneously. Once or twice a fortnight this sinus was exposed for some time in a room crowded with patients suffering from tuberculous lesions; it was washed with water from a dirty tin basin that had been used for years by hundreds of patients for washing away the discharge from tuberculous sinuses, and it was then dressed with a pad of common oakum taken from an open box, in which it had lain for months, exposed in this room daily crowded for three or four hours with patients dripping with tuberculous pus. At the end of some months of this treatment the surgeon in charge, as he afterward told me, confirmed his diagnosis of tuberculous joint-disease by finding tubercle bacilli in the discharge from this patient's sinus. The patient continued for more than two years under the most approved mechanical treatment without apparent improvement in the condition of the joint or diminution in the amount of discharge from the sinus. Then, under a comparatively short course of mercury and iodide of potash, the sinus closed and all symptoms of joint-disease disappeared—leaving behind, however, a deformed and stiff joint.

Syphilitic spondylitis differs in no way from syphilitic joint-disease located elsewhere, except as it is modified by its peculiar surroundings. In the superficial joints, where the infiltration of the soft parts and bone can be readily seen and felt, the onset of the disease is very slow, and months may pass before pain is complained of or disability becomes serious; but in the spine, where the lesion is located in and about the anterior surface of the vertebral bodies, far beyond sight and touch, the slow advance of the early symptoms escapes recognition and the onset usually appears to be comparatively rapid. On any motion the distant pain is complained of, and sometimes within a few days the patient is unable to stand without support. If located in the dorsal region, the kyphosis soon appears with a sharp angle, formed of but one or two spinous processes, and with a long sweeping curve above and below. In the lumbar region, the kyphosis is slow to appear, often not appearing until marked psoas-contraction can be made out, and perhaps not until an abscess has formed; but lordosis is an early and well-marked symptom.

When the disease is once established, it seems to follow the rule of all syphilitic lesions, and is a cumulative process rather than one of degeneration—it is a hyperplasia rather than a molecular disintegration. When a certain point has been reached, resolution takes place, or the new tissue dies and an abscess rapidly forms. If the abscess can be evacuated under favorable conditions the disease often goes on to a rapid and complete recovery. Abscesses that are not within reach will almost invariably undergo rapid resolution when, under the influence of the mercurials, the patient is once well.

If no syphilitic history can be obtained from either parent, and if it cannot reasonably be suspected, an examination of the spine alone may not be sufficient to warrant the diagnosis of syphilis. Other things must then be taken into consideration; for, although a syphilitic spine may, and no doubt does, often exist without there being or having been other syphilitic lesions, the presence of such lesions is evidence of such value that the patient should always be carefully examined.

Spondylitis in very young children, that is to say, under three years of age, and spondylitis associated with chronic disease of some other joint, or in another portion of the spine separated by a healthy area, is in my experience more often syphilitic than tuberculous. Such cases always repay a careful examination and a strict watch for the appearance of other syphilitic manifestations, namely, nasal catarrh with the formation of reddish-brown crusts, suppurating otitis, corneal opacities, interstitial keratitis, Hutchinson's teeth, periostitis, cutaneous eruptions, and sores about the anus and genitals. In my experience, the most common associated symptoms have been the bone and joint-lesions at some distant point, and the least common have been the skin-eruptions.

The treatment of syphilitic spondylitis should be both mechanical and medicinal; but the mechanical plays by far the less important part, and rest in bed or on some form of portable bed will be found to be more demanded than braces. Rest in the recumbent posture during the painful stage is absolutely essential, while the application of specially devised apparatus may be looked upon more in the light of a luxury than a necessity. The medicinal

treatment consists of mercury and iodine. Large doses should be used; if the stomach will tolerate it, as much as one-thirteth to one-twenty-fourth of a grain of the bichloride or biniodide, with from five to forty grains of potassium iodide three or four times a day. If the stomach proves irritable, mercury with chalk in from three- to five-grain doses, with inunctions of blue ointment, are advisable. Tincture of iodine in from one- to ten-drop doses may be given. It will be found that these children usually bear these medicines in as large doses and as well as do adults.

CASE OF ABSCESS OF LUNG; OPERATION; RECOVERY; REMARKS.[1]

By FRANCIS HUBER, M.D.,
of New York.

As a text for the remarks to follow, the history of the case is given in brief:

Benj. J., four years old, had been ill about four weeks when first seen in October, 1888. He was troubled with exacerbations of fever, irregular chills, and a distressing cough; had lost flesh and strength, growing pale and waxy in looks. The physical examination was negative, with the exception of an area of flatness, with distinct bronchial breathing in the right infra-clavicular and mammary region. Exploratory puncture brought pus, and the diagnosis of localized empyema was made. At the operation (incision with drainage) pleural adhesions were found and the pus was discovered to be in the substance of the lung. The cavity gradually contracted and a small fistula remained, which closed about ten months from the onset of the disease.

The exploring syringe readily detected pus on the day prior to the operation. Rather unwisely, the needle was removed and the incision made. When the pleura was opened, the needle was again inserted, and it was only after repeated punctures that the site of the suppurating process was rediscovered. A severe pneumonia of the upper lobe (laterally and posteriorly) resulted, no doubt caused by the multiple punctures. In another case I shall certainly leave the needle in as a guide. Gentle irrigation of the cavity or of the fistula later on was not followed by any bad effects; if forcible injections were resorted to, a severe paroxsymal cough would follow, to terminate when the injected fluid had been expectorated, the fluid having entered a bronchial tube.

Although abscesses of the lung secondary to tuberculosis, pyemia, metastatic processes, or traumatic in character, are by no means infrequent, the simple non-tuberculous and non-metastatic varieties are but rarely met with. They present themselves in one of four forms. In the first variety the symptoms are obscure and the diagnosis is only made when the abscess ruptures into a bronchus or the pus is discharged externally through the integument. In the second class the symptoms resemble those of pleurisy with effusion; in the third class, those of tuberculosis; the fourth variety is generally associated with broncho-pneumonia. The affection is at times met with in children in a debilitated condition, living under poor hygienic surroundings. Meigs and Pepper believe the trouble to be of frequent occurrence, a sequel to the third stage of pneumonia, while Gerhardt, Henoch, Eustace Smith, and others, teach the contrary. The early recognition of the disease is difficult, for the disorder is usually secondary to pneumonia; the occurrence of chills, sweating, and increased vital depression ought to put one on his guard. A sudden expectoration of pus, with the rapid formation of a cavity in a portion of the lung previously consolidated, is characteristic of the rupture of a pulmonary abscess.

Abscesses may be solitary, of greater or less size; may be multiple and disseminated, superficial or deeply seated. The smaller may coalesce to form larger abscesses. The process may run an acute course or become chronic; it may occur coincidently with the original disease or manifest itself later, the pulmonary tissue remaining consolidated, resolution not having taken place. The walls may be sharply defined or the suppurating process may gradually be lost in the normal lung-structure. Perforation may occur into a bronchus or externally through the integument; the pleura or some adjoining organ may be invaded. Or the abscess may become encysted, undergo calcification, caseous degeneration, or become infiltrated with tubercles. In some cases the entire lung has been destroyed and converted into a large abscess-cavity.

The physical signs are not characteristic; before rupture occurs the parts are consolidated. A sudden more or less copious expectoration of pus in the progress of a pneumonia is due to the bursting of a pulmonary abscess. We now get the physical signs of a cavity in a portion of the lung previously infiltrated.

As to differential diagnosis: In gangrene the odor of the breath is fetid, the expectoration being green, fetid, and penetrating. Localized empyema may be excluded by the absence of a history of former pleurisies. In empyema discharging through the lung, the quantity of pus expectorated is large and the physical signs reveal fluid in the pleural sac. When hepatic abscesses discharge through the bronchi, the expectoration is copious, dirty-brown, and paroxysmal. In doubtful cases of tuberculous character, the presence of tubercle bacilli will establish the diagnosis.

Treatment is symptomatic, and consists in the use of stimulants, tonics, and antiseptic inhalations.

[1] Abstract of a paper read before the American Pediatric Society, Washington, September 23, 1891.

The exhaustion may be counteracted, and infection prevented by proper incision and drainage.

In conclusion, the rules enunciated by Drs. Spillman and Haushalter are presented for our guidance:

1. Before operation, the position of the abscess must be determined as accurately as possible, and especially by exploratory puncture.

2. As a rule, a pulmonary abscess should not be opened during the course of an acute pneumonia.

3. Before the abscess is opened, it is well to excite pleuritic adhesions, if these do not already exist. This should be done by resection of a rib and suture of the two pleural surfaces, or by means of the actual cautery.

4. The abscess is best reached by resecting a rib and piercing the lung with a thermo-cautery.

5. Free drainage is essential; antiseptic injections are best avoided, dry dressings being preferable.

CLINICAL MEMORANDUM.

GUNSHOT WOUND OF THE LEFT CUNEUS, WITH RIGHT HOMONYMOUS HEMIANOPSIA.[1]

BY J. T. ESKRIDGE, M.D.,
OF DENVER, COL.

E. A., a well-developed colored man, was shot in the left occipital region of the head in the latter part of May, 1890. From the measurements taken on the scalp, the ball, of thirty-eight caliber, entered the brain two and a half inches anterior to the occipital protuberance and half an inch to the left of the median line. The ball was extracted a few hours after the infliction of the wound, by enlarging the opening in the bone. The ball was found about half an inch below the cortical substance of the brain. The man was considerably depressed by the shock, but apparently did well for two or three days subsequent to the operation. I examined him on the second day after the ball was extracted. Besides a sense of prostration of which he complained, and a tendency to sleep, there was nothing in his condition to interfere with a satisfactory examination. I found no rigidity, paresis, or paralysis, of any of the muscles. The pupils were slightly dilated, but responded well to light and accommodation. There was no difficulty in moving the eyes in all directions. The plantar and patellar reflexes were very feeble, but a little more marked on the left than on the right side. The cremasteric and abdominal reflexes were abolished on the right side, and were feeble on the left. Tactile, muscular, temperature, and pressure senses, were normal. Taste, hearing, and smell seemed to be well preserved, and equal on the two sides. The acuteness of vision was not tested, but the fields were well preserved on the left side of each eye, and totally blind up to the median line on the right. The fundus of each eye appeared nearly normal, excepting a possible slight hyperemia of the papilla. His mind appeared to be dull and to act slowly; but on arousing him from his apathetic condition he answered questions fairly satisfactorily, and seemed to appreciate what was said to him. Concentrated attention could be maintained by him only for a few seconds, from a feeling of exhaustion. Temperature 100°, pulse 90, respiration 28.

The day after the examination he was more stupid, and was inclined to sleep constantly, and on the following day he was totally unconscious, with a temperature of 102°. He died on the fifth day.

The autopsy, under the direction of the coroner, was made eighteen hours after death. On removing the surgeon's dressings, not a drop of pus was found. The opening in the skull, enlarged by the trephine, was one inch in diameter, and was two inches anterior to a point opposite the occipital protuberance, and three-fourths of an inch to the left of the median line. The membranes of the brain, both the dura and the pia, were engorged with blood, but no pus was found. There was a hole in the brain-substance two inches in diameter. Posteriorly, it extended to within one and a half inches of the tip of the occipital lobe. On the median surface of the hemisphere there was a thin layer of brain-substance, apparently about one-eighth of an inch in thickness posteriorly, and from one-quarter to three-eighths, anteriorly. This was not softened or broken down anteriorly, but at its posterior portion lacked normal consistence. The destroyed brain-substance reached anteriorly a point one inch posterior to the upper end of the fissure of Rolando.

Laterally, over the convex surface of the brain, the wound reached to a point one and a half inches distant from the angular gyrus, but the white matter of the brain was softened to a point almost beneath the gyrus angularis. The cuneus was as completely destroyed as it would have been possible for an expert physiological experiment to have effected without interfering with other portions of the brain. The wound did not extend down to the tentorium cerebelli. The great ganglia and the base of the brain presented a normal appearance.

[1] Read by title at the meeting of the American Neurological Association, September 24, 1891.

CURRENT LITERATURE.

TREATMENT OF HEPATIC COLIC WITH OLIVE OIL.

VILLEMIN (*Bull. Gén. de Thérap.*, No. 14, 1891) admits that while clinically the good effects of olive oil in the treatment of hepatic colic are recognized, no explanation of the mode of action yet proposed is satisfactory.

1. *The direct action of the oil upon the calculi.* It has been said that the oil, entering the gall-bladder, softened the stones, which were then driven into the intestine by muscular contractions of the wall of the bladder. In fact, in several animals killed after a quantity of olive oil, pure or colored, proportionate to the weight of the animal, had, by means of a tube, been introduced into the stomach, Chauffeard and Dupré recovered the oil in the stomach and intestine, and never beyond the ampulla of Vater in the duodenum. Further, if a cholesterin calculus be immersed in olive oil it remains unaltered, without change in aspect or consistency.

2. *The cholagogue action of the oil.* Most clinicians

admit that it is impossible to disintegrate or dissolve biliary calculi *in situ*; by the use of cholagogue remedies and of olive oil it is hoped to accomplish the arrest of an attack of hepatic colic by hastening the descent of the stone by increasing the secretion of bile and causing its expulsion into the intestine. To ascertain whether or not the oil possessed the property of increasing the biliary secretion, numerous experiments have been performed upon animals in which biliary fistulæ had been established. Schmidt and Bidder noticed in cats fed upon a diet of fat a diminution in the quantity of bile discharged. Rosenberg, however, believing that bile is necessary for the emulsification and reabsorption of fats, thought that the ingestion of a large quantity of oil should cause an abundant secretion of bile. In dogs that received in addition to their usual nourishment about 100 grams of olive oil, he noticed at the end of thirty or forty-five minutes, sometimes only after two hours, an increase in the biliary secretion, which became considerable toward the third or fourth hour. With other cholagogues he failed to obtain effects comparable in duration or intensity to those produced by the oil. He noticed, moreover, that, under these conditions, the bile was diminished in consistency, as a result of which the precipitation of cholesterin seemed to be retarded. In the second place a more abundant flow of bile would result in a purely mechanical action. In truth, many observers attribute a preponderant role in the formation of calculi to a stagnation of the bile. It has, however, been shown that while the cholagogue action of drugs is very efficacious in preventing hepatic colic, these are without effect in arresting an attack of existing colic. In the case of the oil the atack is arrested in a few minutes, whilst the cholagogue action never follows before a half-hour.

3. *Reflex action.* There is yet the possibility of reflex action to explain the mode of action of the oil. Whatever may cause the engagement of the calculus in the cystic duct, it can descend even to the duodenum without difficulty or injury. If the stone is small it is carried off with the bile; if it is larger, it is propelled by the contractions of the muscular fibers of the duct. It has been demonstrated that attacks of hepatic colic are dependent upon reflex spasm of the walls of the gall-bladder, or of the cystic or common duct. To relieve such an attack a remedy should overcome the spasm upon which the pain depends. It is, therefore, believed, that in the first place the oil, by determining a greater fluidity and abundance of the bile, may prevent the formation of calculi, and when an attack of hepatic colic has been induced the oil may by a reflex action arrest both the spasm of the biliary passages as well as the pain occasioned by this spasm; subsequently the cholagogue action of the oil may favor the descent of the calculus into the intestine.

The mode of employment of the oil varies with the end to be accomplished. When an impending attack of hepatic colic is to be averted, the oil is best administered in the evening, at as long an interval as possible after the meal, in order not to interfere with digestion. A dose of an ounce and a half, repeated on several successive days, will generally be sufficient to abort an attack. When the oil is employed to relieve an attack of hepatic colic various methods have been pursued. The oil has been given alone, in doses of about twelve ounces, taken in two equal parts, at an interval of fifteen or thirty minutes; it is sometimes used in combination with belladonna. Five ounces of oil may be administered with half an ounce of cognac, the white of two eggs, and some menthol; or four ounces of the oil may be given five or six hours after a slight repast, and on the next day an ounce and a half of castor oil. Villemin always employs the oil in four-ounce doses, preceded and followed by a mouthful of cognac or of brandy, which the patient may swallow or use as a gargle to overcome the disagreeable taste. Notwithstanding the usual repugnance or disgust that patients manifest for the remedy, vomiting rarely follows its administration. In some cases this even removes the sense of nausea that may previously have been present. The oil at once arrests the acute pains, and shortens the period marked by dull pains, weakness, malaise and jaundice, so common after attacks of hepatic colic.

PANCREATIC DIABETES.

Rendu (*La Semaine Médicale*, March 25, 1891) has described the varieties of glycosuria. Sometimes glycosuria is transient; the urine of certain individuals, overfatigued physically and especially mentally, from time to time contains traces of sugar. Such glycosuria disappears after some days of rest and seems to have no serious significance. It is the same with the glycosuria observed in some acute conditions, as in poisoning by the vapors of charcoal. In the cases indicated, the glycosuria is probaby a result of congestion of the bulb, and is not true diabetes.

Diabetes is probably always of nervous origin. Rendu is convinced that whenever glycosuria exists, the bulb is involved. In this category belong the cases of Claude Bernard, in which the diabetes was the functional expression of a lesion of the medulla or the fourth venticle. Leudet has reported cases of basilar meningitis with glycosuria; in some cases of diabetes Luys has post-mortem found marked congestion of the floor of the fourth ventricle; in still other instances, tumors have been found in the same region.

The most important and the most frequent form of diabetes is constitutional or diathetic, of which there are two varieties: adipose or gouty, and thin or pancreatic. The diabetes of the adipose or gouty is hereditary; it may continue for years without impairing the general health. It frequently alternates or coincides with other articular or gouty manifestations, or with such conditions as external hemorrhoids, eczema, migraine, or epistaxis; the patients are also often asthmatic. Some marked differences exist between these two types of diabetes. Gouty diabetes is insidious in onset; thirst may be absent; furuncles may appear, or an existing wound cicatrizes slowly; there may be itching of the genitalia; there are flashes of heat, or there is insomnia. The quantity of urine passed during the twenty-four hours does not usually exceed five liters (five quarts) with a maximum of from thirty to forty grams (from an ounce to an ounce and a quarter) of sugar per liter; emaciation does not usually result; finally, the quantity of sugar in the urine is readily controlled by treatment. Each year after a sojourn at Vichy or at Carlsbad, the sugar com-

pletely disappears from the urine, to reappear at the end of some months. Such patients, however, may live for many years without accident, save perhaps itching or an outbreak of furuncles. They must, however, be regarded as invalids, as in them surgical or medical disorders may assume a grave character and rapidly terminate fataly. In these cases there is nearly always a psychic cause for the condition—a strong emotion, or financial loss. The nervous system seems to play an important rôle. In some cases bulbar manifestations are seen, as, *e. g.*, albuminuria or polyuria, alternating or coinciding with the glycosuria.

The manifestations of pancreatic diabetes differ from the preceding. The patients are neither diathetic nor predisposed; suddenly, without apparent cause, without prodromes, grave diabetes is evident. Polydipsia associated with polyuria develops in the midst of apparent health, and a condition of pronounced debility is soon reached. In some patients intestinal disorders, paroxysmal diarrhea, ill-defined chronic enteritis, with rapid loss of strength, usher in the disease. The stools may contain free fat. The onset may be marked by cerebral disturbances, such as vertigo, somnolence or insomnia. Premature and absolute impotence not dependent upon general paralysis or locomotor ataxia should create a suspicion of diabetes. The patellar reflex may be abolished. In addition to the excessive thirst and appetite there is an unusual sense of fatigue, at first physical and soon intellectual; the patient becomes apathetic; in some cases moral depression may be the first indication of diabetes. While in the diabetes of the gouty or adipose the quantity of urine rarely exceeds three or four liters, in pancreatic diabetes it is often much greater. The degree of azoturia is proportional to the degree of glycosuria. Trophic disorders are prominent. Lesions of the retina are observed; the teeth and hair fall out; finally, a series of digestive disorders arise that lead to rapid emaciation. Tuberculosis frequently develops.

Lesions of the pancreas were long ago observed in cases of diabetes. In five cases of nine, Frerichs has noticed atrophy of the pancreas; while the lesions described have not in all cases been identical, they have all been associated with destruction of the organ. Atrophy is frequent; a sclerotic condition, either pericanalicular or perivascular, is often found. In some instances the volume of the pancreas was normal, but the glandular element was completely altered or had disappeared. In dogs, extirpation of the pancreas has been followed by diabetes with polyuria, glycosuria, and emaciation.

It seems, then, that a pathological relation exists between the condition of the pancreas and diabetes—a relation, however, the details of which are not yet understood. It is also probable that the polyuria and glycosuria are much more common as a result of disease of the pancreas than as a result of lesions of the fourth ventricle. The prognosis of pancreatic diabetes is much less favorable than that of diabetes in the adipose or gouty. In the pancreatic form therapeutics is entirely powerless; slight amelioration may be obtained from the administration of opium, antipyrine, arsenic, lithium, or the bromides; but the glycosuria cannot be made to disappear completely. In diabetes of the adipose, medication is speedily successful.

MEDICAL PROGRESS.

Concealed Rupture of the Perineum.—At the recent congress of the British Gynecological Society, THOMPSON (*Provincial Medical Journal*, July 1, 1891) described a condition in which the vagina is lacerated in its lower portion, the rent not involving the posterior commissure. Its occurrence is announced by a peculiar sensation imparted to the hand supporting the perineum during labor. Unless immediately repaired the injury may imperil the life of the mother, from the accumulation, decomposition and absorption of lochial discharge through the lymphatics of the perineal body, which communicate directly with the peritoneum.

Treatment of Diphtheria with the Galvano-cautery.—HAGEDORN (*Deutsche medicin. Wochenschr.*, No. 28, 1891) recommends the galvano-cautery in the treatment of diphtheria of the pharynx. The disease is conceived to be at first local and microbic, the constitutional involvement being secondary. A stirrup-shaped cautery is employed and is applied as soon as the diphtheritic membrane makes its appearance. Pain is overcome by preliminary cocainization. The reaction is slight. No harm is done if the membrane should prove not to be diphtheritic. The treatment has been pursued in twenty-four cases, with but one death.

Electrostatic Treatment of Strangury.—BENEDIKT (*Wiener medizin. Presse*, July 5, 1891) reports two instances of strangury, one in a case of tabes dorsalis, the other in a feeble-minded individual, and refers to others, in which, after other measures had failed, the application of static electricity, by means of the douche and the spark to the vertebral column and to the region of the bladder above the symphysis pubis, was followed by excellent results. The relief of the symptoms referable to the bladder is in turn followed by an ability to sleep.

Paralysis of the Vocal Bands and Icterus.—In conjunction with cases already reported by Gerhardt, and suspected of belonging in the category of Weil's disease, KAPPER (*Wiener medizin. Presse*, July 5, 1891) reports two analogous cases in which, following exposure to cold, there developed malaise, headache, fever, jaundice, aphonia, dysphagia and enlargement of the liver and spleen, which gradually subsided and were followed by recovery.

Sarcinæ in the Urine.—FINLAYSON (*British Medical Journal*, June, 27 1891) reports two cases in which sarcinæ were found in the urine. In one, in a man seventy-one years old, they were found at an interval of fifteen years. In neither was the health interfered with. In both a catheter had been used. In one, the urine contained neither albumin nor sugar; in the other, pus was present.

To Obviate the Entrance of Air into the Pleura in the Performance of Pneumotomy, ROUX (*Journ. des Soc. Scient.*, June, 1891), in a case in which he opened a tuberculous cavity in the lung, united the two layers of pleura by means of a continuous suture, thus closing the pleural sac against the entrance of air.

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THE OPHTHALMIA OF INFANTS.

IT is no exaggeration to say that if the medical undergraduate were well instructed in one bit of knowledge it would be of more benefit to humanity than his whole course in obstetrics. And yet, generally speaking, it is true that during his entire three years of obstetric study he hears not a single word of this that should be a part of his teaching, this that could be learned in five minutes and that is of such enormous importance; but by a hundred lectures he is taught how to deliver women that, as a rule, without his help deliver themselves most excellently well. All of which long text must not be construed to mean any undervaluation of the importance and excellence of obstetric teaching as usually given in our colleges. It is to be construed solely as a desire to emphasize the fact of the duty neglected by the professor of instructing his classes in the prophylaxis and treatment of ophthalmia neonatorum. It may also stand as a protest against the outrageous negligence of medical colleges in not making ophthalmology an obligatory study, and in not making an examination in the treatment of the commonest ocular diseases a prerequisite of graduation.

For many years ophthalmic surgeons have been hammering away at this, writing, teaching, and begging their *confrères* to heed the lesson. It is a very simple lesson, a perfectly well understood pathology, an infallible prophylaxis, and, if caught in the easily recognized early stages of the disease, an almost infallible cure. In spite of this, what is the fact? There are perhaps 75,000 people in the civilized world blind from infancy solely because the lesson has not been heeded; every day there turn up at the oculist's office cases that make one's heart bleed —mothers heartbroken because the baby is blind— cases that need not have been; cases that, had the oculist seen them a day or two earlier, could still have been saved.

The public cost of keeping a blind person in our institutions is about $130.00 a year. If we suppose a like cost obtains elsewhere, we find the world's expense-item for inexcusable negligence in ophthalmia of the newborn to be something like ten millions of dollars per annum. For the United States alone this expense is probably nearly or quite two million dollars. But this is not all. Suppose the needlessly blind, instead of an expense, were, by the possession of visual power, productive members of the community, and suppose we estimate the average value of their labor at one dollar a working day. If, therefore, we add this loss of productive labor to the actual expense of the support of these blind, we have, for the civilized world, the stupendous sum of between thirty and forty millions, and for the United States alone some seven millions of dollars. Every State has, therefore, the most absolute of rights to demand that the medical colleges within her bounds shall fit their graduates to cope with this evil. Every taxpayer is interested. This, of course, is the very lowest, but a very palpable argument against such criminal negligence.

Last spring, and every spring, many students are graduated in the United States without a rag of knowledge or power of art to forefend all this. It is a strange illustration of how in medicine an œstrual fury for strange knowledge may seize upon men, bacteriomanias, hydrophobiaphobias, and all the rest, while the great, the feasible and the simple duty is scorned.

> "Our best things are nearest us—
> Lie close about our feet;
> It is the distant and the dim
> That we are fain to greet."

What is every obstetrician's duty as to the care of the newborn baby's eyes? Immediately after birth,

he should cleanse the lids and the face all about the eyes with a weak bichloride solution, and drop some of this, or of a one per cent. solution of nitrate of silver, on the globes. The baby's hands should also be aspecticized, and the nurse or mother instructed to cleanse her own hands, and not allow them, or cloths, handkerchiefs, etc., to come in contact with the infant's eyes. Despite these prophylactic measures, nurse, mother, and doctor must watch for the early signs of purulent conjunctivitis; any swelling or redness of the lids, or any purulent discharge from the eye, means that prophylaxis has failed, and that the entrenched enemy must be proceeded against with restless vigor. The eyes can still be saved.

Instead of this, what commonly happens? The baby's eyes or the dangers to them are never thought of, and when the lids of one eye begin to swell and a purulent discharge oozes from it, the mother is told by the nurse or someone else that the child has "only a little cold in its eye." The application of "breast-milk," or tea-grounds, or some such fol-de-rol is made, and the days go on while the eye is being ruined. If the doctor is called in he may vaguely suspect this to be something like a disease he dimly remembers to have heard of. If so, he prescribes a boric acid solution to be dropped into the eye. Even suppose the doctor realizes the danger (though this too rarely happens) and prescribes a true antiseptic, ten chances to one he will still make two fatal errors: he will order the antiseptic to be only dropped into the eye, and he will not isolate the diseased eye. He has never learned that there is no cure for purulent conjunctivitis unless the palpebral sulci are cleansed, and the germicide repeatedly brought into contact with every part of the palpebral and bulbar conjunctiva; and he has also not learned that, without isolation of the diseased eye and scrupulous precautions, pus from this eye is certain to get into the non-affected eye and ruin that also.

In such cases—constantly happening all about us—no conscientious physician would dare go on the witness-stand and testify that this is not unqualified malpractice, for which anyone guilty is liable for heavy damages. It would be a sad method of teaching a needed lesson, and one can only hope that for an individual's sake the lesson may not be so taught, though one must silently confess that should it arouse the whole profession to a realizing sense of its duty, the private and single tragedy would be for the common good.

A PAGE OF MEDICAL HISTORY.

THERE is a deal of good knowledge, good wit, and good literary work in the excellent article of DR. CONKLIN on "Molière and the Doctors" (*Transactions of the Ohio State Medical Society*, 1891). It is a pity that it should not have a wider circulation than a society report is likely to give it. This glimpse into the life of our professional brethren of only two hundred years ago is not only entertaining, but is of a double service; as the author acutely says:

"The medicine of the seventeenth century stands out prominently as one of the greatest landmarks in its history, and the story of its struggles and triumphs enables us to better understand the present and to more accurately forecast the future.

"We fortunately belong to a century which has illumined every department of human thought with learning and genius, and which has done so much for the upbuilding of scientific medicine. But we must not forget that each preceding age has wrought its full share in the evolution of medicine. It fell to the seventeenth century to break the chains of servitude and liberate medicine from the trammels of authority which had so long hindered the coming of modern science.

"To us it seems almost incredible that one of the most difficult lessons the race had to learn was to accept the testimony of the senses, and yet every page of history attests its truth. It is precisely here that we find the difference between ancient and modern medicine. The one concerned itself only with the proofs of authority; the other relies wholly upon the proofs of experiment and experience. Modern medicine aknowledges no intellectual restraint. She bids defiance to tradition, boldly questions authority, and sets precedent at naught. With the present means of inter-communication and interchange of ideas, which bring into elbow-touch co-workers in every corner of the globe, the day of long probation for alleged discoveries has gone forever. Illustrations crowd upon our attention. The Elixir of Brown-Séquard and Tuberculin of Koch, both too recent to need elaboration at our hands, strikingly illustrate the modern method of dealing with new problems. Every new hypothesis is at once submitted to fair but rigid laboratory and clinical tests, and by the result of these must it stand or fall. But opportunities bring with them responsibilities. A past, glorious in its achieve-

ments, warns us to avoid the errors of the epoch which we have been considering, lest another Molière should come gifted with the power to make us 'see oursel's as ithers see us,' and a future, splendid in its possibilities, lays upon us the obligation to so labor that the profession of medicine shall continue to advance with a broad front to greater victories."

Guy Patin, a Parisian physician of the seventeenth century, remarkable for wit, learning, and dogmatism, is thus neatly sketched:

"Patin was an active participator in the controversial disputes which raged around him. He combated the Arabians, denounced the surgeons and apothecaries, rejected the Harveian circulation and chemistry. He hated antimony because it came from the chemists and cinchona because it was introduced by the Jesuits. He believed implicitly in Hippocrates and Galen, in the old Faculty, and in Guy Patin. His creed contained but two articles: bleeding, and purging with senna. With a good lancet and a pound of senna he proposed to cure more patients than the Arabians with their polypharmacy. His love of bleeding was excessive, but in this he only reflected the orthodox practice of the day. He bled babes of three days and his mother-in-law of eighty years. He tells boastingly of a patient who recovered after seventy-two bleedings and forty purgings."

THE HOSPITAL AND DISPENSARY ABUSE.

The growing evil of the abuse of the benefits intended to be conferred by the charitable work of the hospitals and dispensaries of our large cities requires no special elaboration. The fact is too patent to escape the observation of even the least observant. It were urgently desirable that some appropriate remedy be devised for the correction of the evil. The abuse of a public charity must needs result in injury to both recipient and benefactor—and this injury is in turn transmitted from the individual to the community. It is gratifying to learn that the recognition of the wrong is eliciting expression in hospital reports, and especially gratifying that it should, in the following language, receive consideration in the second Report of the Superintendent (Dr. Henry M. Hurd) of such a model institution as the Johns Hopkins Hospital.

"It demoralizes any man to receive as a gift what he is able to pay for wholly or in part. Indiscriminate and hap-hazard charity begets habits of improvidence and a wastefulness, if not of actual vice among its recipients. No poor man, woman or child ought to suffer for good medical and surgical attention in this city from lack of ability to pay for it. On the other hand, no person should receive such attention as an absolute free gift who is able to pay any portion of the cost of it. I would urge that all applicants for relief at the Dispensary and Hospital be promptly and carefully scrutinized in the interests of both the public and the Hospital. In addition to the evil effect upon the community of indiscriminate charity, there is also danger of doing injustice to the profession of medicine which numbers among its members so many persons actively engaged in charitable work. Neither the Hospital nor Dispensary should interfere with the sources of support of these men by affording free medical or surgical treatment to those who are able to pay for it."

EXCISION OF PART OF RIGHT LOBE OF LIVER.

We learn that on October 9 Professor W. W. Keen, of Philadelphia, removed from a patient a considerable portion of the right lobe of the liver for the excision of a cystic tumor, the entire mass taken away being about two-thirds the size of a man's fist. The woman's temperature has remained normal, or nearly so, since the operation, rising only once to 100° F. There seems every reason to believe that the patient will recover.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-seventh Annual Meeting, held at Washington, September 23, 1891.

Papers on the "Extraction of Cataract," were read by Dr. D. Webster, of New York, Dr. H. Knapp, of New York, and Dr. J. A. Lippincott, of Pittsburg. The first and second advocated so-called simple extraction; the latter performs preliminary iridectomy, and removes the cortical matter by syringing.

Dr. C. S. Bull, of New York, reported "A Case of Brain-tumor, with Autopsy." There were persistent inequality of the pupils, a history of previous syphilis, attacks seemingly of petit mal and lapses of memory; also paresis of the internal recti muscles and ptosis; moderate optic neuritis in the right eye, which afterward subsided under large doses of potassium iodide; and later hemianesthesia developed. There was no headache until a few hours before death. The autopsy revealed a large glio-sarcoma in the left frontal lobe, without a sign of meningitis.

Dr. P. A. Callan, of New York, reported two cases of "Orbital Traumatism, Followed by Immediate Monocular Blindness, and Subsequent Atrophy of the Optic Nerve Due to Fracture Involving the Optic Foramen."

In one case, the blow was received over the left eye, while the right became blind.

DR. MYLES STANDISH, of Boston, had seen two cases in which it was stated that blindness had developed immediately after injury, but there was no ophthalmoscopic evidence of injury; the pupils reacted to light. He was inclined to regard these patients as malingerers; but three or four months later, the evidences of optic-nerve atrophy appeared.

DR. S. B. ST. JOHN, of Hartford, had seen a case in which blindness resulted from a resection of the infra-orbital nerve, attended with more than the usual amount of hemorrhage.

DR. S. D. RISLEY, of Philadelphia, had seen four cases of monolateral atrophy of the optic nerve, three of them following blows on some portion of the orbital ridge, and one after a blow on the top of the head.

DR. R. A. REEVE, of Toronto, reported a case of "Traumatic Pulsating Exophthalmos Treated by Ligation of the Common Carotid." The patient had received a kick on the side of the head and in a few days was conscious of a shrill sound, that later became a purring bruit, and pulsating exophthalmos developed. Compression of the carotid controlled the pulsation and bruit so long as it was continued, but intermittent compression kept up for hours at a time, over three months, failed to effect any permanent improvement. Five hours after the ligation of the carotid, the bruit returned. although it was readily controlled by compression of the other carotid. Ligation of the second carotid was advised.

DR. GEORGE C. HARLAN, of Philadelphia, had seen a case in which cure had been effected in six months by intermittent compression. The patient devised a pad and applied the treatment himself.

DR. E. GRUENING, of New York, found divergent squint quite amenable to the ordinary operative treatment, but the operation must be performed with a freer division of the tissues than for convergent squint. After the tenotomy he passes a ligature from one eye to the other, and leaves them fixed in a decidedly convergent position.

DR. S. M. BURNETT, of Washington, read a paper, entitled "Contributions to the Study of Heterophoria," which will appear in a later number of THE MEDICAL NEWS. He had found heterophoria less frequently than ametropia a cause of eye-strain. While, theoretically, prisms should be sufficient to afford relief, there were practical difficulties connected with their use, and it is a serious matter to have to constantly wear glasses of any kind if it be possible to dispense with them. This it is often possible to do by graduated tenotomy, which he believed could be adapted to the needs of the case. He reported a series of headaches of the severest type almost entirely relieved by such operations.

DR. GEORGE C. HARLAN, of Philadelphia, described a modification of Dieffenbach's operation for the restoration of the lower lid, designed to prevent dragging on the transplanted flap, or on the external canthus by cicatricial contraction, by replacing the flap used in reconstructing the lid by a second, sliding flap taken from the temple, where the cicatrization of a considerable raw surface would cause no injurious traction.

DR. S. THEOBALD, of Baltimore, reported two cases of successful skin-grafting for extensive loss of the substance of the eyelids. Thiersch's method was employed and the grafts were taken from the inner surface of the forearm and placed on the raw surface from which granulations had been removed.

DR. GEORGE E. DE SCHWEINITZ, read a paper, entitled "Neuroma of the Right Upper Eyelid and Adjacent Temporal Region," in which he described a case of neuroma of the upper eyelid and adjacent temporal region that had occurred in his service in the Philadelphia Hospital, and that had been observed both by his colleague, Dr. George M. Gould, and by himself. The growth was congenital, affected the upper eyelid of the right side and the right temporal region, the patient at the time of examination and operation being a lad of twenty years of age. Dr. de Schweinitz had performed three operations upon this case; the first a dissection of the tumorous mass from the eyelid, the second a plastic operation to relieve the resulting entropion, and the third, Panas's operation for ptosis, the final result of the surgical interference having been a reasonably good effect. Although clinically the case had presented the appearance of a fibro-fatty tumor, or perhaps of a circumscribed congenital elephantiasis of this region, a careful microscopic examination revealed that in addition to an overgrowth of the connective tissue of the part, as well as of the connective tissue of the walls of the vessels, sebaceous glands and hair-follicles, there were large strands of soft connective tissue, in the center of which were compressed and atrophied nerve-fibers. In all probability the growth had developed from the fibrous sheath of small cutaneous nerves, and had later involved the connective tissue of the structures just named. The research was illustrated by microscopic slides and a series of micro-photographs that had been prepared from these slides by Dr. William M. Gray, of the Army Medical Museum.

DR. F. M. WILSON, of Bridgeport, read a paper on "The Use of Vaselin in Gonorrheal Conjunctivitis," in which he advocated the employment of vaselin as an important adjunct in treatment. The unguent furnishes a protecting coating to the cornea, aids in keeping clean the conjunctival sac, and greatly diminishes the pain and risk of perforation of the cornea. He reported the results of its use in forty-seven cases, on which his conclusions were based. To be efficient, the vaselin must be applied freely between the lids, and the manipulation of the eye continued until the unguent has become liquid and made its way to every part of the conjunctival sac.

DR. H. KNAPP, of New York, demonstrated and recommended a roller-forceps for the mechanical treatment of trachoma by extrusion of the exudate from the conjunctival tissue. He had used the forceps in fifty-eight cases, and found that it caused less laceration of the tissues than other methods of accomplishing the same purpose. Cases of follicular disease are permanently cured by one thorough expression of the diseased tissues, while cases of mixed character may in addition require a few weeks' treatment with astringents. The mechanical treatment of trachoma is certainly a great advance over the method by the repeated use of caustics and astringents alone.

DR. E. E. HOLT, of Portland, Me., reported six cases of extraction of foreign bodies from the vitreous. In

several the wound of entrance was enlarged and the bit of steel searched for and extracted with the electro-magnet. In one, in which the foreign body was not a bit of steel, the wound was extended and the body was extracted with the forceps. In all but one case the result was most satisfactory; in that case two weeks had elapsed without efficient treatment.

Dr. S. B. St. John, of Hartford, reported three cases of extraction of foreign bodies from the eyeball, in one of which a bit of wire from a whip-lash remained, transfixing the cornea, iris and lens for a month, without great reaction in the eye. In another, a foreign body imbedded in the iris was removed by drawing out a portion of the iris, releasing the body and returning the iris to the eye substantially uninjured. In the third case, a bit of steel discovered at the back of the eye with the ophthalmoscope was left to become encapsulated.

Dr. L. H. Taylor, of Wilkesbarre, reported a case of brain-tumor with a high grade of choked disk, in which there were no convulsions, except a falling-down at the beginning of the symptoms, from which time on the patient was confined to the house. The optic nerves later became atrophied and there was hemianesthesia. At the autopsy a large glioma was found springing from the corpora quadrigemina and the floor of the fourth ventricle, pushing up the posterior lobe of the cerebrum and causing an erosion of the overlying portion of the skull.

Dr. Albert G. Heyl, of Philadelphia, read a paper on "The Caliber of the Retinal Vessels in Injuries of the Convexity of the Brain." This paper was a contribution to what Dr. Heyl calls diametroscopy of the retinal vessels, or the study, by inspection, of their diameter. The clinical material upon which the observations were made consists of twelve cases of injury to the vault of the cranium, drawn for the most part from the wards of the Episcopal Hospital for the purposes of study. These cases are divided into two groups: 1. Those that presented the phenomenon of delirium, or the initial stage of it. In this group, the retinal veins, while but slightly altered in diameter, were rounded in contour, and had a circular cross-section. The arteries showed a decided tendency to contraction. One was a case, typical of the group—a case of pure brain-contusion, ending fatally. At first a slight enlargement of the arteries was noted, followed to the close by steady contraction. This contraction was a slow process. An additional case was cited in which head-injury was followed by atrophy of the optic nerve, and the retinal vessels presented appearances analogous to those already described. Two cases were also reported, in which intracranial hemorrhage—at least, in one case—occurred at the time of injury, from a wound of the arteria meningea media, requiring ligature; in these the diameter of the vessels varied somewhat from that described. 2. In this group a psychical phenomenon that Dr. Heyl calls *sopor alternans*, was presented—*i. e.*, the condition in which a patient, after a severe head-injury, becomes alternately conscious and unconscious. In the most typical of the three cases in this group, in the *sleeping* stage the pupil is contracted, in the *waking* stage dilated; corresponding changes were noticed in the retinal vessels. In the *sleeping* stage the veins were about normal in diameter, the artery three-quarters of the normal diameter; in the *waking* stage, both arteries and veins were contracted to one-half the normal diameter.

Dr. T. G. Sutphen reported three cases of amaurosis; one after suppression of the menses, another after parturition, and a third with complete blindness in one eye without ophthalmoscopic changes. The first and second progressed to atrophy; in the third, partial recovery ensued.

Dr. G. E. de Schweinitz, of Philadelphia, next read a paper entitled "Additional Experiments to Determine the Lesion in Quinine-blindness." He briefly reviewed the results of his previous experiments to determine the lesion in quinine-blindness, in which he showed that quinine given to dogs in quantities varying from one grain to four grains to the pound produces blindness in from three to fourteen hours, the earliest appearance of the amaurosis after the injection being three hours. The ophthalmoscopic picture in these animals was in all particulars similar to that which has been noted in human beings suffering from quinine-amaurosis.

A second series of experiments was detailed in the present paper, by which it was shown that the same results can be produced with all the various salts of quinine, and that the prolongation of quinine-blindness produces a true atrophy, sometimes associated with the production of thrombosis in the central vessels. The sections upon which these facts were based were made by Dr. William M. Gray from a dog that had been for two months kept completely blind. The microscope showed cupping of the optic-nerve entrance, complete atrophy of the optic nerve, chiasm and optic tracts, an organized thrombus in the central vessels, and some degeneration of the lenticular ganglion. A very remarkable fact is the selection of the optic nerve for the influence of quinine, as careful sections of the ciliary and other cranial nerves showed absolutely normal structure. Both of these sets of experiments seem to prove that the action of poisonous doses of quinine is originally due to a constriction of the peripheral vessels; that later on, distinct changes, either in the blood itself or in the bloodvessels, are developed, and that consequent thrombosis may occur, followed by a complete atrophy and fatty degeneration of a large portion of the visual tract.

Dr. Charles A. Oliver, of Philadelphia, read a paper entitled "A Clinical Study of the Ocular Symptoms Found in the So-called Mongolian Type of Idiocy." He found that the irregularity, inequality and malposition of the bony orbits and their contents, which more than anything else characterize the Mongolian type of idiocy, are instances of general osseous and ligamentous malformations characteristic of the disorder. The eyeball itself presents the results of a low grade of chronic neuro-retinitis and choroiditis. The intra-ocular termination of the optic nerve and adjacent retina share in the soft gelatinous edema recognized in the external portions of the organ. The mucous membranes of the eye and its appendages are liable to the chronic inflammations that occur in other mucous membranes. As part of the imperfect development and consequent disease of the entire vascular system, the walls of the retinal vessels appear thin, peculiarly tinted, and there are hemorrhages into the retina.

Dr. Edward Jackson, of Philadelphia, called attention to an unavoidable distortion of lines seen through

cylindrical lenses, unless such lines run parallel or perpendicular to the axis of the lens. The distortion varies with the strength of the lens and its distance from the eye. With lenses of unequal strength or with axes not parallel the distortion necessitates a readjustment of balance for the oblique muscles, and this is capable of causing eye-strain, which is lessened by placing the lenses as close as possible to the eye.

DR. L. H. TAYLOR, of Wilkesbarre, reported a case of insanity following the instillation of atropine into the eyes of a young woman who had been under severe mental strain, partly from nursing an insane mother. She had used the drops two days without unusual symptoms, and then had paroxysms of causeless weeping and developed melancholia.

DR. S. D. RISLEY, of Philadelphia, in a note on hyoscyamine, reaffirmed his high estimate of its value as a mydriatic, but stated that it was a drug extremely liable to essential alteration in the process of manufacture, and that many preparations of inferior quality were on the market. To get its good effects one must use a crystalline hyoscyamine prepared by one of the best makers.

DR. SAMUEL THEOBALD, of Baltimore, called attention to subnormal accommodative power as a cause of asthenopia. It is to be remedied by the wearing of convex lenses for near work, with decentering outward if necessary.

The following officers were chosen for the next year:

President.—Dr. Hasket Denby, of Boston.

Vice-President.—Dr. Geo. C. Harlan, of Philadelphia.

Secretary and Treasurer.—Dr. S. B. St. John, of Hartford.

Corresponding Secretary.—Dr. J. S. Prout, of Brooklyn.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-fourth Annual Meeting, held at Washington, September 22, 1891.

DR. H. KNAPP, of New York, read a paper entitled, "Operations for Mastoid Disease," in which he reported two cases. In the first there was otorrhea, intense headache, nausea, giddiness and some stupor. In the fourth week the mastoid was opened to the depth of fully half an inch, but no pus was found. The patient was at first relieved, but his symptoms afterward returned, and he died comatose in the eighth week. The autopsy disclosed diffuse purulent meningitis and a small abscess in the jugular fossa, separated from the wound of operation by a thin layer of healthy bone. Had the operation gone a little deeper it might have saved the patient's life. In the second case the prominent symptom was severe pain, radiating from the mastoid, and bulging of the upper part of the drum membrane. Treatment failed to afford relief, and the mastoid became tender and doughy. An extensive opening in the mastoid disclosed intense congestion of the bone and the membrane lining the air-cells, and a few granulations, which were removed. The patient was relieved by the operation and got quite well. Operation is justified in congestive mastoiditis, which otherwise is apt to persist for years, and lead to sclerosis.

DR. C. J. BLAKE, of Boston, reported twenty-three recent cases of operation, with removal of all diseased bone by curetting with a sharp spoon after perforation with a drill. In several cases the cure was complete in two weeks or less; but in some, in which the operation had been long delayed, the cure was slower, and the permanent damage great. In one case death resulted after the inefficient treatment of making an incision only through the soft tissues; and in another, in which the operation was delayed, metastatic irido-choroiditis caused the loss of an eye; there was also involvement of the hip.

DR. E. GRUENING, of New York, found tenderness over the affected part the constant and significant indication for opening the mastoid. He removes all the cortex of the bone and finds no after-treatment required.

DR. F. M. WILSON, of Bridgeport, maintained that no single symptom can be regarded as conclusive. He had seen two cases of pyemia from mastoid disease, one of them ending in death by pulmonary abscess.

DR. B. A. RANDALL, of Philadelphia, reported a case of suppuration about the ear, with epileptiform seizures of growing frequency. Exploratory trephining was performed behind the meatus. Slow healing went on to the fourteenth day, when there were pain and swelling below the mastoid, followed by severe headache, meningitis, and death on the twenty-third day. The autopsy disclosed denudation of the antrum and attic, with erosion of the ossicles, and sub-arachnoid purulent effusion with no trace of direct communication from the temporal bone. A series of specimens from fatal cases were exhibited, showing various channels of communication of the inflammatory process with the intra-cranial structures.

DR. J. M. RAY, of Louisville, reported a case of acute suppuration of the middle ear, causing meningitis and death, in which the autopsy revealed no involvement of the temporal bone; the septic infection seemed to have taken place through the general circulation.

DR. CHARLES H. BURNETT, of Philadelphia, read a paper on "Excision of the Membrana Tympani and Necrotic Malleus for Chronic Purulent Otitis Media," reporting four cases in which, after the failure of all other rational treatment, he had excised the tympanic membrane and the malleus. In the first case suppuration of twenty-five years' standing was checked, hearing remaining unaltered. In the second, the discharge was lessened, but not checked; hearing improved from ten inches to ten feet. In the third—a case of chronic suppuration, with frequent cholesteatomatous collections and pain—the discharge was checked and the hearing improved from zero to two feet. In the fourth, one of thirty years' standing, the discharge ceased and the hearing improved from six inches to eight feet.

DR. SAMUEL THEOBALD, of Baltimore, read a paper on "Healing of Old Perforations in the Drum Membrane." He reported some partially successful efforts to promote healing of old perforations of the tympanic membrane by the wearing of artificial drum-membranes of absorbent cotton moistened with vaselin. These must be carefully placed and renewed every week or so. He had also added balsam of Peru for its stimulating effect.

The following officers were chosen for the next year:

President.—Dr. Gorham Bacon, of New York.

Vice-President.—Dr. Huntington Richards, of New York.

Secretary and Treasurer.—Dr. J. J. B. Vermyne, of New Bedford, Mass.

AMERICAN PHYSIOLOGICAL SOCIETY.

Second Special Meeting, held at Washington, D. C., September 22, 23 and 24, 1891.

First Day—September 22d.

Dr. H. N. Martin, of Baltimore, read an interesting paper on "The Effects of Bleeding and Starvation upon the Proteids of the Blood." In his experiments he used cats. They were bled twice. At the first bleeding from 50 c.c. to 80 c.c. of blood were withdrawn, and after an interval of twenty-four hours the animals were bled to death.

The blood was subjected to an analysis which showed in every case a marked decrease in the amount of proteids contained in the blood obtained in the second bleeding, while the fibrinogen was greatly increased in quantity. From his experiments Dr. Martin wished to show that hemorrhage caused a great diminution in the proteids, while the fibrinogen was greatly increased between the first and second bleedings, as a result of the manufacture of red blood-corpuscles from the hematoblasts which threw out their nuclei in this process, and that it was from these extruded nuclei that the great increase of fibrinogen was derived.

Dr. S. J. Meltzer, of New York, read an elaborate paper on the "Respiratory Changes of the Intra-thoracic Pressure, Measured in the Mediastinum Posterior," in which he endeavored to show that the method of measuring the intra-thoracic pressure through the esophagus could not be relied upon, owing to the irregularity of the thickness of the walls of the esophagus. The method of Dr. Meltzer consisted in making an incision in the crico-thyroid muscle, and gently passing a catheter down into the mediastinum posterior. By connecting this catheter, by means of a rubber tube, with his registering apparatus, he was able to get a correct record of the intra-thoracic pressure. It was found that the pressure above the fourth rib was considerably less than that below that level.

Second Day—September 23d.

Dr. Wm. Noyes read a paper on "Experimental Studies on the Knee-jerk in Terminal Dementia. (*a*) During the cycles of depression and exaltation. (*b*) During sleep."

In his experiments Dr. Noyes clearly demonstrated that except during a period in which the subject was in a state of profound mental depression, the knee-jerk was as distinct as in the normal individual; during conditions of depression, however, it was greatly diminished; while with the disappearance of these conditions the knee-jerk again returned to its normal condition. It was demonstrated that during sleep the knee-jerk could be elicited without awakening the hemispheres—that is, the leg would respond to a blow upon the ligamentum patellæ that was not sufficient to interfere even with the snoring of the subject. Any unusual noise in the room, such as walking across the floor, slamming a door, or rapping upon a table at the time the blow was struck, would greatly increase the force of the knee-jerk.

When the subject was in a condition of semi-sleep, *i. e.*, not snoring, the curves on the tracing-paper caused by the knee-jerks were irregular, but, as soon as the subject was awakened and spoken to, they again became regular. This, it was thought, was caused by the fact that, when the subject was awakened, more blood was sent to the spinal cord, as a result of which the reflex again became normal.

Dr. J. W. Warren, of Boston, followed with a paper on "The Knee-jerk Studied Simultaneously in Both Legs."

In his experiments he arranged two hammers, by means of springs, so that every blow was struck with the same force, and so that either one or both legs could be struck simultaneously or successively at a short interval. When, after a subject had been struck a number of double blows, a single blow was suddenly given to one leg alone, both legs would respond to the stimulus.

Dr. Warren also brought out the fact that when a series of single blows were given to one leg alone and then a double blow was suddenly struck, he would fail in a great many instances to get a double jerk. This failure was more marked in the right leg than in the left, the left responding in 16 per cent. of the cases and the right in only 9 per cent. This difference he attributes to the fact that the left leg is the one usually used in making a test, and in a series of experiments this difference is greatly diminished.

When a series of single blows were struck on one leg and then a single blow was struck on the other leg, a response was often wanting. This failure was also more frequent on the right than on the left. During sleep, he often failed to get any response to a blow, unless a noise was made at the time of striking the blow. In some cases, however, a second blow would bring out a response without the assistance of a noise.

Third Day—September 24th.

Dr. W. P. Lombard, of Worcester, Mass., read an interesting paper on "Some of the Influences that Determine the Strength of Voluntary Muscular Contractions," as determined by a simple and effective apparatus that was exhibited. Dr. Lombard's experiments were all conducted upon himself; the results obtained were eminently satisfactory. He demonstrated that loss of power was due to fatigue of the central nervous system and not to fatigue of the muscles themselves. When the muscle was no longer able to lift a weight, it was stimulated by electricity and promptly responded by a strong contraction, showing that the muscle was not fatigued. When the weight was detached from the muscle, the will-power could induce a contraction; so that the fatigue was somewhere between the muscle and the brain. Dr. Lombard also showed the influence exerted by weather, food, exercise, alcohol and tobacco upon the amount of work performed. Food, exercise and alcohol increased the amount of work performed. When the barometer was rising, power increased; with a falling barometer there was a de crease of power. High temperature diminished power.

Humidity and high temperature diminished power. With the humidity not excessive, and the temperature not very high, there was but little effect upon power. Whenever he smoked a cigar, his power diminished. Exercise increased his power. The greatest increase of power he derived from a small quantity of whiskey and water; and as the quantity of whiskey taken was small, there was no after-depression. His power also changed with the diurnal changes of the barometer, so that his minimum power was at 4 P.M.

DR. C. F. HODGE, of Worcester, Mass., followed with a valuable paper on the "Diurnal Changes in Nerve-cells as the Result of the Normal Activity and Rest of the Animal." His experiments showed a decided shrinkage in the nuclei of the nerve-cells examined in the evening, when compared with those examined in the morning.

DR. H. P. BOWDITCH, of Boston, read a paper on "The Fatigue of Nerve-fibers, studied by Means of the 'Action' Current."

DR. V. C. VAUGHAN, of Ann Arbor, read an abstract of a paper in which he detailed the discovery of a new bacterial product from typhoid germs. This product is so poisonous that when ten milligrams were injected into a guinea-pig, it caused death in half an hour.

The session was closed by the reading of a paper on "The Size of the Cranial Nerves in Man," by DR. H. H. DONALDSON, of Worcester, Mass.

ASSOCIATION OF AMERICAN ANATOMISTS.

Fourth Annual Meeting, held at Washington, September 23, 1891.

APPROPRIATE resolutions on the death of Professor Joseph Leidy, President of the Association, were offered by DR. D. S. LAMB and passed by a standing vote.

DR. WM. P. CARR, of Washington, read a paper entitled "The Systematic Use of the Eye in Teaching Anatomy," in which he maintained that the training of the hand by dissection of the subject and attention in the lecture-hall to didactic statements are not sufficient for all purposes of education, but that the teacher, with chalk in hand, drawing outlines upon the blackboard or demonstrating from models on the lecture-table, is doing more important work. The ability to prepare papier-maché models is a desirable accomplishment. The speaker exhibited one model, made by himself, representing the human cerebrum, with the special object of giving correct impressions of the fornix and the descending horn of the lateral ventricle. Dr. Carr claimed that with a little practice anyone could make models at comparatively slight expense. The full text of the paper will appear in a later number of THE MEDICAL NEWS.

DR. HARRISON ALLEN, of Philadelphia, read an elaborate paper on "The Teaching of Anatomy to Advanced Students." He claimed that those who, after completing their medical studies, still desired to advance in the direction of anatomical research, had little or nothing offered them in our medical schools; a movement should be initiated to establish courses of instruction for such men. In his judgment, this plan would embrace a scheme of physiological anatomy that might be said to represent the plan designed over a hundred years ago by John Hunter. Dr. Allen approved of the establishment of a Hunterian museum, and, if practicable, of a Hunterian laboratory, in connection with the University scheme. Dr. Allen's paper will appear in full in a later issue of THE MEDICAL NEWS.

DR. ROBERT REYBURN reinforced Dr. Allen's claim as to the physiological basis of teaching anatomy. The three papers elicited much discussion, which, on the whole, was favorable to the tenets claimed.

DR. WM. BROWNING, of Brooklyn, read a paper on the "Arrangement of The Supra-cerebral Veins in Man, as Bearing on Hill's Theory of Developmental Rotation of the Brain," in which he endeavored to show that the disposition for the transverse cerebellar veins to remain at right angles to the main axial vein was evident throughout life. Owing to the curvature of the cerebrum forward during development, the veins in this portion of the encephalon depart from the embryonic scheme indicated and the vessels become displaced obliquely downward and backward.

PROFESSOR D. J. CUNNINGHAM, of Dublin, by invitation of the Chair, made an interesting statement respecting the development of the fissure of Rolando and the adjacent fissures, as well as those of the island of Reil. He showed the harmonies existing between the two sets of fissures. All the fissures named appear to be composed of three distinct simple involutions that become united at a late phase of development.

DR. C. HEITZMANN, of New York, read a paper on "The Structure of Basis-substance and Cement-substance." He had already shown that the basis-substance of all the varieties of connective tissue is structural, but freely supplied with living matter, in the same way as is protoplasm. The changes that take place in the process of inflammation, the reappearance of protoplasm after a liquefaction of the more solid substances, filling the meshes of the reticulum of living matter, likewise furnish proof of the vitality of basis-substance. Heitzmann was also the first who succeeded in demonstrating the reticulum in living protoplasm. The cement-substance between the individual epithelial and endothelial cells is traversed by delicate processes that have been shown to penetrate deeply into the protoplasm of epithelial cells. These processes are also constituted of vital matter and actively participate in the process of proliferation in inflammation as well as in the formation of tumors. Thus the continuity of living matter is established in all the tissues throughout the animal and vegetable organism, and the main point of the cellular theory, that cells are individuals, is proved to be a fallacy.

DR. W. M. GRAY, of the United States Army Medical Museum, exhibited a number of serial fetal sections mounted in large frames. He also showed a number of enlarged photographs of the same sections.

DR. HARRISON ALLEN, of Philadelphia, made some remarks on the teeth of cheiroptera. He claimed that some of these teeth were tactile in function, since from their small size and the absence of fixed positions they could have no use in attrition or prehension. In some genera, the cingula on the premolars were entire, features unknown in any other of the mammalia. The reduction in size of the last molar was secured by a novel method, the tooth not becoming rounded or nodular, as is the

rule, but the plan of the fluted and complex form of the anterior molars being retained, even as a rudiment. The action of the tongue as a mechanical factor in forcing the teeth apart was dwelt upon, and comparisons were drawn between the appearances seen in the condition known as macroglossia as met with in man, and the arrangement of the teeth in animals having long, prehensile tongues.

Dr. E. A. Balloch, of Washington, D. C., read a paper on "The Relative Frequency of the Psoas Parvus Muscle in the Colored Race." It was shown that the psoas parvus is almost invariably present in the negro on both sides and is well developed, while in the white race it is infrequently so.

Dr. Frank Baker, of Washington, presented specimens of platycnemic tibiæ, as well as exceptional forms of femora and fibulæ that had been claimed as having value in identification of race. Dr. Baker claimed for such peculiarities less importance than had been accredited them by writers.

Dr. D. S. Lamb, of the Army Medical Museum, Washington, D. C., read a paper upon "The Supra-condyloid Process in the Human Subject." An examination of over 620 humeri from whites, blacks and Indians, of both sexes and of all ages, showed the presence of this process but once. This rarity was in striking contrast to the frequency with which the anomaly has been found by European observers, as Gruber and Struthers. The analogy of the process to the supra-condyloid foramen in the lower animals was discussed. Both the foramen in them and the process in man were to convey the brachial vessels and median nerve and protect them from pressure in lateral movements. The process is a muscular tubercle for the attachment of an anomalous slip of the pronator radii teres muscle.

The paper concluded with a contrast between such animals as the cat, which have this foramen, and dogs, which do not have it, but do have the olecranon perforation (not present in cats), and discussed the significance of these facts in relation to the natural movements of those animals. As to the process in the human subject, it was apparently a reversion.

Mr. F. A. Lucas, of Washington, exhibited museum specimens designed to demonstrate homologies of bones in the skeleton of man and the animals related to him.

The paper of Ida H. Hyde, of Chicago, entitled "Notes on the Hearts of Certain Mammals," was read by title. From a study of the hearts of many animals, certain facts were observed and conclusions reached warranting further investigation. According to some authorities, the presence of the tuberculum Loweri and Eustachian valve in the cat have as yet not been determined. Nevertheless, Miss Hyde found in the heart of every animal examined what she considers the homologue of the tuberculum Loweri of the human heart.

She found the Eustachian valve only in man and in the monkey, and a remnant of it in the cat. It extends caudally over the orifice of the coronary sinus, and protects it, differing in these respects from that of man. It is this valve that in the cat has been mistaken by anatomists for the Thebesian valve.

The statements concerning the Thebesian and Vieussens valves are perplexing. Some writers state that the Thebesian valve covers the orifice of the coronary vein, whereas this orifice is guarded by the Vieussens valve—so named in honor of its discoverer. According to other writers, the coronary valve guards the orifice of the coronary sinus; but the valve protecting this orifice was first described by Thebesius, and in his honor called Thebesian valve. It is a crescentic valve at the cephalic edge of the orifice.

Miss Hyde rejected the generalization that the Thebesian valve is present in every instance in which the coronary sinus receives blood from the heart alone, as in man and the cat, but is absent in those animals that have a left precava, or left azygos, as in sheep and the rabbit, since she had found the Thebesian valve in the rabbit, in which, according to this generalization, it ought not to be, while it was absent in the panther, the cat, and the dog, in which, according to the statement, it ought to be present.

Since a valve protecting the termination of the middle cardiac vein existed in every heart examined, and as it is not named, Miss Hyde suggested that it be called the coronary valve.

Some anatomists hold that the coronary sinus is the lower dilated part of the left azygos or left precava when it exists, and that the great coronary vein opens into this trunk. Others, again, claim that the coronary sinus is the dilated part of the coronary vein. Miss Hyde believes that the coronary sinus is the persistent primitive ductus Cuvieri, and that the great coronary vein empties into it, as well as the left azygos or left precava when it exists, the blood passing through it to the right auricle.

Since the oblique vein of Marshall does not send branches into the substance of the heart, it is not, as the older anatomists thought, a branch of the great coronary vein. Although said to be unprovided with a valve, Miss Hyde found one over its orifice in the heart of the Cebus monkey. Inasmuch as the embryo heart shows the oblique vein of Marshall to be the termination of the primitive left precava, she cannot agree with those who hold that it is the termination of the left azygos.

The following resolutions were adopted:

Whereas, The subject of comparative anatomy of race is an important one, and special advantages for the observation and collection of material therefor are afforded among the negro race in North America; be it

Resolved, That this Association recommend that a circular be prepared by the Executive Committee for distribution among the anatomists of North America, inviting coöperation;

Resolved, That the Executive Committee is authorized to incur a cost in printing and distributing these circulars to an amount not exceeding $25.

Fifteen new members were elected.

The following embrace the officers of the Association for the ensuing two years:

President.—Harrison Allen, of Philadelphia.

Vice-Presidents.—Charles Heitzman, of New York; T. N. Gill, of Washington, D. C.

Secretary and Treasurer.—D. S. Lamb, of Washington, D. C.

Delegate to Congress.—F. J. Shepherd, of Montreal. *Alternate:* R. W. Shufeldt, of Washington.

Executive Committee.—Burt G. Wilder, of Ithaca; T. Dwight, of Boston, and E. C. Spitzka, of New York.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

FIRST DAY—SEPTEMBER 24TH.

THE President, DR. G. BETTON MASSEY, delivered an address entitled "A Plea for the Associated Cultivation of Special Expertness in Medicine," which will be found elsewhere in the current number of THE MEDICAL NEWS.

DR. A. D. ROCKWELL, of New York, read a paper entitled "Electro-therapeutics in America," which is to appear in a subsequent number of THE MEDICAL NEWS.

DR. BLACKWOOD, of Philadelphia, stated that he had operated on thirteen cases, each of which had been diagnosticated by at least one eminent gynecologist. He had used the faradic current of a strength as great as could be borne, and preferred faradism to galvanism because of the action of the former on the muscular fibre. He maintains that the faradic current does destroy the integument. For the last ten years he had obtained the best results from central treatment, which he considers the best means to overcome obscure nervous affections. Nevertheless, he often depended on localized treatment as well.

DR. AUGUSTIN H. GOELET, of New York, read a paper on "The Action and the Application of the Faradic Current in Gynecology," in which he maintained that imperfectly constructed apparatus is the cause of the indifferent results that have been obtained by various observers. The construction of secondary coils has heretofore been looked upon with such indifference by physicians who use them, that the manufacturers, with no guide for their construction, have suited their own convenience, regardless of the physiological effects to be produced. In consequence, these coils in the ordinary apparatus will be found constructed of wire from No. 15 to No. 26, and from sixty feet to two hundred yards in length. Experience has shown that the faradic batteries of ordinary construction are totally inadequate for gynecological work, and satisfactory results cannot be expected from their use. The uncertainty of the statements of manufacturers regarding the length of the wire composing secondary coils has led Dr. Goelet to advise those who desire to be accurate to measure the resistance of their coils and calculate the length for themselves. He considers the Engelmann battery, with three different secondary coils, to be the only reliable apparatus manufactured in this country, suitable for gynecological work. In it the secondary coarse-wire coil is made of No. 16 wire, about 75 yards long; the intermediate is of No. 22 wire, 225 yards long; and the fine-wire coil is of No. 32 wire, about 660 yards long.

Though these coils are to be regarded as a great improvement on others, they do not wholly meet the requirements of gynecological work, since in very sensitive conditions the current from the finest coil cannot be borne. It has, therefore, been suggested that one spool should contain 1500 yards of No. 36 wire, which, if tapped at 1000 yards, would give two additional coils, one of 1000 and one of 500 yards in length; then another coil of No. 32 wire, 800 yards long, tapped at 500 yards, would give a coil of that length, one of 300 and another of 200 yards; then there is another coil of No. 22 wire, 250 yards long, to correspond with Engelmann's intermediate. There should also be a coarse-wire coil of No. 16 wire, about 100 yards long. By this arrangement practically eight different coils are secured, and a corresponding variation of the current, with but four spools; so that it would be possible to treat very sensitive conditions that could not be approached with the other coils.

Evidence was adduced and experiments cited showing conclusively that there is a marked difference in the effect of the current as it is derived from coarse-wire and fine-wire secondary coils, and in accordance with different lengths of wire of the same size. The current from the coarse-wire coil is one of volume or greater ampèrage, as distinguished from that of the fine-wire coil, which is a current of tension or greater electromotive force. The former is useful for muscle-stimulation, the latter for nerve-sedation. The failure to obtain satisfactory results with the faradic current was attributed to the imperfect and variable construction of apparatus by different manufacturers. The use of a rheostat or controller in the secondary circuit does not sufficiently influence the physical conditions of the current to make one coil suitable for all purposes.

The vibrator or current-breaker upon the ordinary faradic apparatus produces interruptions entirely too coarse, while the movement is uneven and irregular. To produce sedation with the fine-wire coil a maximum rapidity of interruption should be obtained; there should be not 50 or 80 interruptions, as is usually the case with the ordinary apparatus, but from 100 to 200, per second. Coarse interruptions are more stimulating and irritating, while fine interruptions are more sedative. It is important to use coarser vibrations for the coarse-wire coil, and finer vibrations for the fine-wire coil. The current from the coarse-wire coil is used for muscular stimulation, and that from the fine-wire coil for sedation. In applying the current for muscle-stimulation it is desired to produce alternate contraction and relaxation in imitation of the normal physiological action; the interruptions must be slow, so as to allow the muscles time to respond in a normal manner—that is, sufficient time must be allowed between the interruptions to allow the molecular changes to take place. In effecting sedation it is desired to paralyze the sensory nerves and to exhaust and relax the muscles, thus relieving the painful contractions; the interuptions must therefore be fine. When the interruptions are rapid the muscles are unable to respond to every vibration, and constant contraction or a tetanoid condition is produced, which eventually exhausts the contractile power of the muscles, so that a condition of relaxation is produced if the application is continued long enough. This constant and intense stimulation of the sensory nerves likewise results in a temporary loss of their power to respond, and a condition of anesthesia is brought about, which is more or less prolonged, according to the duration and frequency of the applications. To secure sedation the application should be maintained for from ten to twenty minutes; the strength of the cur-

rent must be increased gradually, without jerk or shock, and it should be withdrawn in the same manner. The duration of the application of the current from the coarse-wire coil should be limited to five minutes.

As a result of the influence of the current upon the vasomotor nerves and the capillary circulation, blood-stasis is relieved and the absorption of effete products is hastened.

Dr. Goelet maintained that the faradic current displays polarity; observation has shown that there is a distinct difference in the physiological action of the two poles. This is explained by the fact that, on account of the high resistance of the human body, only the break-current has a perceptible action, the make-current being cut down to such an extent by self-induction as to make its action upon human tissues inappreciable. Hence, when used upon human structures, the faradic current may be said to flow in one direction; it is not an alternating, but an interrupted current.

The best effect of the secondary current is obtained only when the secondary coil completely covers the primary coil, that is, when the whole of the secondary coil is receiving the full amount of induction. In order to secure this from the beginning of the application and at the same time to make it bearable to the patient, a rheostat or regulator, composed of fine German-silver wire of a length sufficient to afford adequate resistance, is placed in the battery circuit. By this means the operator has perfect control of the current and graduates it in accordance with the requirements of the case. The increase or decrease of the secondary current is regulated by increasing or diminishing the strength of the current in the battery circuit by means of this regulator, which interposes a variable resistance. The method of operation consists in applying the electrodes with the secondary coil removed from the primary coil; then allowing just sufficient current to flow through the regulator in the battery circuit to operate the vibrator smoothly, but feebly; the secondary coil is then slowly moved until the primary coil is completely covered. The strength of the current is still further increased by allowing more current to flow through the rheostat or regulator until the desired intensity is reached. Applied in this way, the best effect of the secondary current is secured from the beginning of the application, and the most sensitive conditions, that could not possibly be treated in the ordinary manner, may be brought under its influence.

Acute inflammatory processes are also amenable to treatment with the faradic current, under suitable conditions of high tension, as when it is derived from a coil of very fine wire of great length, if a maximum rapidity of interruptions with perfect smoothness is secured—the effect being obtained by restoring the equilibrium of the circulation.

Dr. Bigelow, of Philadelphia, stated that clinically there is a very marked, decided, and important difference between primary and secondary currents. In all cases of ovarian troubles the current from the secondary coil is the only one that will be tolerated. He had seen cases of ovaritis, characterized by persistent and aggravated pain, yield at once to applications of the secondary current; similar cases were aggravated to a degree unbearable by the primary current. In some recent observations he had seen ovaritis yield more rapidly to the static current, which is more like the faradic. The sensation produced by the secondary current is pleasant; the action of the current as a sedative is marked.

The secondary current is much less a muscular stimulant than the primary current. In cases of pain and of fibroid tumors the faradic current is to be preferred.

Dr. Hayes, of Chicago, stated that clinical experience had demonstrated that the faradic current is sedative in its properties, and the question now presents itself, How can the sedative properties necessary in ordinary practice be developed? He had not been able to recognize any physiological difference between the two poles of the faradic battery; he was satisfied that pain can be relieved with either pole; whether one has a more sedative property than the other he does not know. The fine wire is capable of affording relief, but is also capable of doing great mischief. In subacute conditions inflammation may be lighted up by a weak current of a few minutes' duration. Dr. Hayes related the case of a young woman with pain and tenderness in both inguinal regions, in whom the temperature at no time was more than 99.5°. After three or four days' treatment with the ordinary hot douche and potassium bromide, an application of the faradic coil was made. The pain was somewhat relieved, but in the course of a few days it was evident that a hematoma had developed in the posterior cul-de-sac.

Dr. Hutchinson, of Providence, expressed himself as emphatically in favor of the secondary current. He uses a large coil of some miles of wire, made so that it is tapped at various points so that it can be increased or diminished in force at will.

In a good many years of practical work he has not found any difference in the faradic effects of one pole or the other. The varying number of feet or yards of wire has an effect on the circulating current.

Dr. Walling, of Philadelphia, suggested that perhaps some of the effects noted are due to the rapidity of the vibrations rather than to the coil used. In using the secondary coil he is accustomed to throw the whole coil in and take the current from the rheostat. In this way he obtains better results than in attempting to take a part of the coil. He distinguishes the polarity of the current. In many cases the positive pole appears to be more sedative in its influence than the negative, yet both will relieve pain.

Dr. Morton, of New York, made the point that there is a good deal of misunderstanding concerning the faradic current. The faradic current may be interrupted or alternating. The primary is alternating. A standard induction battery is desirable—a standard coil—a standard length of wire; then comparative observations could be made. Different results may be accounted for by differences in the character and length of the secondary coils. Polar effects may depend upon peculiarities of construction. As the number of coils is increased the voltage and force are also increased. As Dr. Gordon, as a result of his careful measurements, says: the induction-current, the secondary current of the break, measures thirteen times more in intensity than the same current of make. So the make of the primary exerts its entire influence in charging the coil of the secondary. If the current of the break is thirteen times

greater than the current of the make, then one of the impulses is thirteen times stronger than the other. One end of the line will do thirteen times more electrolytic work than the other. Dr. Morton, however, would not admit that the current-intensity of the make is not sufficient to penetrate the human tissues. If the electromotive force of the make, secondary, is not sufficient to penetrate the human tissues, the therapeutist is not treating disease by the alternating current at all, but by the interrupted current.

DR. WAITE expressed the view that to get at the proper coil it is necessary first to make a proper primary and then a secondary current. The number of vibrations has much to do with the sedative effect of the primary current.

DR. MASSEY, of Philadelphia, thought that the problem was one of a technical character and that much can be done when a meter is devised to measure the faradic current, for the whole question at the present time is very much in the same condition as that of the galvanic current was prior to the invention of the milliampère-meter. Dr. Massey has obtained marked contractile effects in certain myomas, in strong primary currents, and good contractile effects in the abdominal walls and intestinal walls by using large poles, one on the back and the other on the abdomen.

The variation between the primary and secondary currents is extremely remarkable. Patients who feel no contraction from the secondary current cannot stand one-quarter of a like strength from the primary. Why? Partly at least because it is in one direction, but more because there is more ampèrage, which is greater when the external resistance is small and the wire coarse.

DR. GOELET added that there is no doubt but that the faradic current as it is employed to-day is merely an interrupted and not an alternating current.

The more rapid the interruptions the more sedative the effect.

If the two currents are applied to resistances like the skin by small electros, one over the hand and another far away at some indifferent point, the current from the fine wire will produce a better contraction than the coarse, because there is more current. Still, if the resistance in the skin is cut down and made little or nothing, as when both electrodes are taken in the hand, or as in the vagina, then, of course, the electro-motive force is not so necessary. The same muscular contractions are not obtained as with the coarse-wire coil.

DR. BIGELOW said the secondary coil is too valuable to be lost sight of; it is because it is so little understood that it is not used more. He had found the apparatus that he was using satisfactory, but discarded it on account of the pain it caused. He expressed the hope that a standard instrument would be devised.

DR. L. A. W. ALLEMAN, of Brooklyn, N. Y., read a paper upon "The Treatment of Corneal Opacities by Galvanism." He had endeavored to test thoroughly the efficiency of galvanism in one class of cases, *i. e.*, opacities. After the subsidence of the corneal inflammation which has given rise to the opacity, the eye usually remains for some time in an irritable condition; it flushes easily, and shows evidence of a high vascularity, an increase of nutritive activity in the neighborhood of the scar. Sometimes vessels are seen running on to the cloudy area; and when this is the case the prognosis is relatively more favorable. For some little time the reparative process may go on with much activity, especially in young subjects; the cloud diminishes in density and extent, but more or less quickly it returns to a condition of normal nutrition; the scar-tissue becomes more resistant and the clearing up proceeds more and more slowly, till it finally ceases. In this stage much can often be accomplished by treatment. Such agents as an ointment of the yellow oxide of mercury, calomel dusted into the eye, massage, and the like, prolong the reparative process. But finally a stage is arrived at where the process is perfectly quiet, and no further absorption of the opaque tissue can be induced. It occurred to Dr. Alleman that in this stage the galvanic current was indicated. He believed the reason why it had not been more successful was that when used through the closed lids, the necessarily feeble current employed on the eye could not produce at the site of the lesion sufficient stimulation to bring about the desired effect, and to meet this indication he had an electrode made, consisting of a silver bar, 12 mm. in length, insulated, except at the ends, by a hard rubber shell; the exposed surface at the lower extremity is slightly concave, 7 mm. in diameter.

A battery of Leclanché cells, a Fleming milliampère-meter, and a rheostat complete the outfit. He uses for an electrode upon the cheek a carbon disc with a short metal handle which fits into a hard-rubber shell. The disc is covered with moist absorbent cotton, held in place by the shell, and is renewed each time the instrument is used.

The cathode is applied to the cornea. Before placing the electrode upon the cornea the patient is directed to touch it to the tip of his tongue, as this gives about the same resistance as through the cornea, and the rheostat is then adjusted until the strength of current desired is obtained. This seems a necessary precaution, as the cocainized cornea might be seriously damaged without any sensation of pain giving warning. The eye being previously well cocainized, the operator stands behind the patient, whose head is thrown back, and, holding the lids well apart with the thumb and first finger of the left hand, the electrode is brought in gentle contact with the cornea.

As a rule, the applications are of three minutes' duration. A strength of ½ milliampère, applied for from one to two minutes, is begun with; if the current is well borne the strength of current is gradually increased to from 1 to 1½ milliampères and the length of the sitting to three minutes.

The results of this method of treatment are satisfactory in the extreme. The duration of the opacity seems to make little difference in the prognosis. The visual results obtained will depend largely upon the position of the cloud. When concentric with the pupil, little improvement is seen till late in the treatment; but when the pupil is covered by the lap of the opacity, the visual improvement is very marked at the outset; this is due to the fact that the scar always clears up from the periphery toward the more dense center. When the scar vascularizes easily the prognosis is most favorable, however old or dense the opacity may be.

In the small, very white scars sometimes seen in adherent leucomata, it takes a very long time to influence

the center of the opacity, and the patient, who is elated by the marked visual improvement obtained by the first few treatments, becomes discouraged with the much slower progress of the central opacity; but in such cases as have persevered for some time there has been a slow but steady improvement, even in the dense white scars.

NEWS ITEMS.

The New York State Medical Association will hold its eighth annual meeting October 28, 29 and 30, 1891, at the Mott Memorial Hall, New York City.

The President, Dr. Stephen Smith, will deliver an address on The Art of Teaching Medicine.

Papers will be read as follows:

The Use of Chloroform in Labor. By Dr. Elbert T. Rulison.

Forced Respiration—Continued Observations. By Dr. George E. Fell.

Preventive Medicine. By Dr. Henry C. Van Zandt.

The Theories of Rheumatism. By Dr. John Shrady.

A Discussion on Acute Diffuse Peritonitis will be opened by Dr. Alfred L. Carroll, and will be participated in by many prominent physicians and surgeons.

Dr. Nicholas Senn will deliver the Address on Surgery.

Other papers will be read as follows:

Dislocation and Fracture of the Vertebræ. By Dr. Charles W. Brown.

Two cases of Forward and Outward Dislocation of the Astragalus, with Mode of Reduction and Result. By Dr. Douglas Ayres.

Larvæ of Dipteræ in the Human Intestine. By Dr. Homer O. Jewett.

Report of an Unusual Case: Was the Diagnosis Correct? By Dr. Simeon Tucker Clark.

Heredity and Environment. By Dr. Judson B. Andrews.

Traumatism, Shock; Moral Causes and Causes Operative at Physiological Epochs. By Dr. H. M. Hurd.

Arrest of Development and Diseases of Infancy. By Dr. E. N. Brush.

Bodily Diseases and Senility. By Dr. P. M. Wise.

Syphilis and Intemperance. By Dr. G. Alder Blumer.

Causes of Insanity Peculiar to Women. By Dr. W. D. Granger.

Tumors of the Orbit and Neighboring Cavities. By Dr. Charles Stedman Bull.

Biblical Medicine. By the Rev. Dr. William C. Bitting.

Orton Prize Essay.

Address on Gynecology. By Dr. A. Palmer Dudley.

Mental Therapeutics. By Dr. Henry D. Didama.

Subjects of Interest, Medical and Surgical. By Dr. John Cronyn.

An Ethical Imbroglio. By Dr. George E. Fell.

The Relation of Nervous Disorders to Indigestion in Women. By Dr. T. J. McGillicuddy.

Carcinoma Mammæ: What May We Expect After Operative Treatment? By Dr. John A. Wyeth.

Disease of the Knee-joint in the Convalescent Stage. By Dr. T. M. L. Chrystie.

Retro-bulbar Optic Neuritis. By Dr. Alvin A. Hubbell.

Typhoid Fever in Children. By Dr. William D Garlock.

Congenital Imperforate Rectum. By Dr. E. D. Ferguson.

The Tenth International Medical Congress at Berlin as I Saw It. By Dr. George Douglas.

Puerperal Eclampsia at the Seventh Month; Induced Labor; Recovery. By Dr. George E. Fell.

Biology and Medicine. By Dr. Hubbard W. Mitchell.

Lateral Curvature of the Spine Associated with Hernia. By Dr. S. E. Milliken.

Dr. James C. Wilson has been elected to the chair of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College, made vacant by the resignation of the distinguished Dr. J. M. Da Costa.

Books and Pamphlets Received.

A Short Manual of Analytical Chemistry, Qualitative and Quantitative, Inorganic and Organic. Arranged on the Principle of the Course of Instruction given at the South London School of Pharmacy. By John Muter, M.D., Ph.D., F.R.S.E., F.C.S. First American from the Fourth English Edition, edited by Claude C. Hamilton, M.D., Ph.G. Philadelphia: Published by P. Blakiston, Son & Co., 1891.

Quiz Compends. Physiology. By Dr. A. P. Brubaker, A.M., M.D. Sixth Edition, Revised and Improved, with new Illustrations and a Table of Physiological Constants. Philadelphia: P. Blakiston, Son & Co., 1891.

Scientific Medicine in Its Relation to Homeopathy. By Professor Theodor Bakody, M.D., of the Buda-Pesth University Translated from the German by Rudolph Bauer, M.D. Philadelphia: Boericke & Tafel, 1891.

Addresses, Papers, and Discussions in the Section of Surgery and Anatomy at the Forty-Second Annual Meeting of the American Medical Association, at Washington, D. C., May 5–8, 1891. Chicago: Printed at the Office of the Association, 1891.

The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and Other Morbid Conditions of these Organs. By B. A. Watson, A.M., M.D. Reprint, 1891.

Deaths from Chloroform and Ether since the Hyderabad Commission; with Conclusions. By Laurence Turnbull, M.D., Ph.G. Reprint, 1891.

Spasmodic Wry-neck and Other Spasmodic Movements of the Head, Face, and Neck. By Noble Smith, F.R.C.S. Ed. London: Smith, Elder & Co., 15 Waterloo Place, 1891.

A Report of Two Cases of Symptomatic Dermatitis in the Puerperal State. By W. Reynolds Wilson, M.D. Philadelphia: University of Pennsylvania Press, Reprint, 1891.

Our Public Institutions as Sources of Impairment of Vision. By J. A. Lippincott, A.B., M.D. Pittsburg, Pa.: Reprinted from the Transactions of the Medical Society of the State of Pennsylvania, June, 1891.

Conditions Following Parturition Requiring Abdominal Section. By E. E. Montgomery, M.D. Philadelphia: Reprint, 1891.

The Sloane Maternity Hospital. Report on the First Series of One Thousand Successive Confinements from January 1, 1888, to October 1, 1890. By James W. McLane, M.D. Reprint, 1891.

Handbook of Materia Medica, Pharmacy, and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription-Writing. By Samuel O. L. Potter, A.M., M.D. (Jefferson), M.R.C.P. (Lond.). Third Edition, Revised. Philadelphia: P. Blakiston, Son & Co.

Diseases of the Nasal Organs and Naso-pharynx. By Whitfield Ward, A.M., M.D. New York and London: G. P. Putnam's Sons, 1891.

A Handbook of Obstetrical Nursing, for Nurses, Students, and

Mothers. By Anna M. Fullerton, M.D. Second Edition, Revised. Philadelphia: P. Blakiston, Son & Co., 1891.

Charaka-Samhita Translated into English. Published by Abinash Chandra Kaviratna. Calcutta: Printed by D. Dass & Co., Corinthian Press, New China Bazaar, 1890. (Pamphlet.)

The Malthusian Theory of Population. By W. H. Washburn, M.D. Reprint, 1891.

Some Experiments on Acetonuria in Diabetes Mellitus, and on the Physiological Action of Acetone in the Animal Organism. By G. Metzler, M.D. Reprint, 1891.

Transactions of the South Carolina Medical Association; Forty-first Annual Meeting, held in Anderson, S. C., June 9 and 10, 1891. Charleston, S. C.: Walker, Evans and Cogswell Co., Printers, 1891.

Manual of Childbed Nursing. By Charles Jewett, A.M., M.D. New York: E. R. Pelton, 1891.

Surgical Treatment of Intussusception. By N. Senn, M.D., Ph.D. Toronto: Reprint, 1891. Printed by The J. E. Bryant Co. (Limited).

The Scientific Rationale of Modern Wound Treatment. By Henry O. Marcy, A.M., M.D., LL.D. Chicago: Reprint, 1891.

Transactions of the Medical Society of the State of West Virginia; Twenty-fourth Annual Session, held at Fairmont, June 10, 11, and 12, 1891. West Virginia Printing Co., Printers.

Saunders' Question-Compends, No. 1. Essentials of Physiology arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By H. A. Hare, B.Sc., M.D. Third Edition, thoroughly Revised, and Enlarged by the addition of a series of handsome Plate Illustrations taken from the celebrated "Icones Nervorum Capititis" of Arnold. Philadelphia: W. B. Saunders, 1891.

"Pulmonary Consumption a Nervous Disease" (by Thomas J. Mays, M.D.) Considered as Such from a Practical, a Clinical, and a Therapeutic Standpoint. By Thomas J. Mays. Detroit: George S. Davis, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 6 TO OCTOBER 12, 1891.

BANISTER, JOHN M., *Assistant Surgeon.*—Granted leave of absence for four months.

SUTER, WILLIAM N., *Assistant Surgeon.*—Granted leave of absence for one month, to take effect on or about October 15, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 10, 1891.

DICKSON, S. H., *Surgeon.*—Ordered to Marine Barracks, Washington, D. C.

MAGRUDER, A. F., *Surgeon.*—Detached from Marine Barracks, Washington, D. C.

FEREBEE, N. McP., *Surgeon.*—Ordered to the U. S. S. "Atlanta."

DRENNAN, M. C., *Surgeon.*—Detached from tho U. S. S. "Atlanta."

TRYON, J. R., *Surgeon.*—Ordered to the U. S. S. "Chicago."

WALTON, J. C., *Medical Inspector.*—Detached from the U. S. S. "Chicago," and granted six months' leave.

KEENEY, J. F., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Minnesota," and ordered to the Naval Hospital, New York.

CRANDALL, R. P., *Passed Assistant Surgeon.*—Detached from the Naval Hospital, New York, and ordered to the Naval Laboratory.

BOYD, ROBERT, *Assistant Surgeon.*—Detached from the Marine Rendezvous, Boston, and ordered to the U. S. S. "Chicago."

ALFRED, A. R., *Assistant Surgeon.*—Detached from the U. S. S. "Fern," and ordered to the U. S. S. "Kearsarge."

GATES, M. F., *Assistant Surgeon.*—Detached from the U. S. S. "Kearsarge," and ordered to the U. S. S. "Fern."

AMES, HOWARD E., *Surgeon*—Ordered as Delegate to the Public Health Association, Kansas City, Mo., October 20, 1891.

NORTH, JAMES H., *Assistant Surgeon.*—Resignation accepted September 8, 1891.

TO CONTRIBUTORS AND CORRESPONDENTS OF THE MEDICAL NEWS.

THE MEDICAL NEWS begs its contributors and correspondents to observe the following:

1. Contributors of original articles, lectures, clinical memoranda or hospital notes, will, upon publication of their communications, be liberally paid, either

a. In cash, or

b. In reprints (250).

It should be distinctly stated, either at the head of the communication or in the accompanying letter, which method is preferred.

2. Copies or abstracts of papers must not have been or must not in the future be furnished any other journal, or published elsewhere, unless the fact have been clearly stated prior to the acceptance by us of the article. *Without an understanding to the contrary, it is held to be a matter of simple honesty that communications sent* THE NEWS *are for its exclusive use.*

3. The rejection of a manuscript does not necessarily imply any adverse editorial judgment as to its literary or scientific value. There are many other reasons that often prevent the acceptance of a manuscript. It may, for example, be rejected because another and similar article upon the same subject has already been accepted and awaits publication; because it could not be published for so long a time that it would become unseasonable; because it would more appropriately appear in some other journal, etc., etc. We cannot undertake to explain the especial reason for not accepting a paper.

4. The probability of the acceptance of an article, as well as the likelihood that it will be extensively read, is greatly enhanced by its brevity. Useless introductions and more useless perorations are always well omitted. Expression should be condensed; not so much as to exclude or to render obscure important things, but sufficiently to economize the time of the busy and tired practitioner and save mental friction in clearly comprehending the article. The results of good thinking, good observation, or good work, can be given in few words—and, with certain rare exceptions, it is results that medical men want.

5. THE NEWS especially desires brief, crisp clinical memoranda and short, concise articles on living subjects—articles epitomizing observations and facts occurring almost daily in the practice of every practitioner. A vast deal of material highly valuable to medical science and to humanity is constantly lost because busy men feel that they have not the time or ability to write elaborate papers. This is wrong. Everyone has some peculiar experience, sees exceptional aspects and phases of disease, has peculiar abilities or methods of practice, comes repeatedly upon a highly anomalous, suggestive, instructive, or interesting case. If such cases were properly placed on record, medicine would be greatly advanced. THE NEWS desires to become the medium of such publication and record.

6. Communications should be prepared in compliance with the following suggestions:

a. Paper larger than 8 × 10 inches should never be used.

b. The paper should be good, white writing paper, not news or tissue-paper.

c. If possible, a manuscript should be type-written.

d. Only one side of the paper should be written upon.

e. A blank margin, at least one inch wide, should be left at the left-hand side of the sheet.

f. Communications should be written in black, non-copying ink.

g. Writing, and especially all proper names, should be distinct and plain.

h. A sheet on which many corrections, interlineations, etc., have been made, should be rewritten.

i. If possible, manuscript should never be folded or rolled.

7. Communications in reference to subscriptions, advertisements, or other business should be addressed to the publishers, MESSRS. LEA BROTHERS & CO., 706 and 708 Sansom Street, Philadelphia. Communications pertaining to the reading columns should be addressed to the Editor:

GEORGE M. GOULD, M.D.,
1004 WALNUT STREET, PHILADELPHIA.

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A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

OBSERVATIONS ON TORTICOLLIS, WITH PARTICULAR REFERENCE TO THE SIGNIFICANCE OF THE SO-CALLED HEMATOMA OF THE STERNO-MASTOID MUSCLE.[1]

BY ROYAL WHITMAN, M.D., M.R.C.S.,
ASSISTANT SURGEON TO OUT-PATIENTS, HOSPITAL FOR RUPTURED AND CRIPPLED, NEW YORK.

ASSUMING that the treatment of any affection must to a great extent depend upon our apprehension of the causes that produce it, I shall call your attention more particularly to etiology, the conclusions being influenced by clinical investigation rather than by recorded theories.

That the bearing of these conclusions on the question indicated by the title of this paper may be clearly understood, I quote from several of the more prominent writers on the subject. F. Busch,[2] for example, says: "Congenital wry-neck is caused, as Stromeyer was the first to show and as is now acknowledged, almost without exception by injury to the sterno-cleido-mastoid muscle at birth, and by subsequent shortening at the place of injury by scar-contraction. The deformity occurs almost exclusively in children delivered by forceps, or more frequently in breech or foot presentations."

In the *Deutsche Chirurgie*[3] the subject is treated by Fisher as follows: "It is certain that tearing of muscle at birth, as Stromeyer has shown, is a frequent cause of torticollis. A tumor appears at the seat of the injury a few weeks after birth, which slowly disappears, leaving shortening by scar-contraction."

Volkmann and Vollert[4] have resected and examined portions of muscle in cases of supposed congenital torticollis. In some no change was apparent; in others the muscular substance had entirely disappeared to be replaced by fibrous tissue; while in the remainder the fibrous degeneration was diffuse, as shown by bands in the muscle substance. These changes they regard as the result of myositis caused by injury at birth. While these observations are of value as showing changes that may occur in persistent wry-neck, they can have but little bearing on the question under consideration, as no evidence is presented of original injury or of subsequent induration, and because similar changes are found in cases of acquired torticollis of long duration, as reported by Robert, Marchessaux, Bouvier, and Witzel.[1]

It is evident that the term injury is not used by these and other writers in a general sense, but applies to partial rupture of the sterno-mastoid muscle—caused, it would appear, by torsion[2] of the neck during delivery of the head, followed by effusion of blood,[3] and later by an encapsulating inflammation[4] at the seat of the injury, as shown by a hard, painless tumor in the substance of the muscle. This induration slowly disappears, to be replaced by fibrous tissue, which, contracting, creates permament torticollis—in other words, a purely mechanical shortening, as distinct from the nerve irritation and spasm that we usually associate with wry-neck. As to the first part of this proposition—that injury of muscle may occur during labor, and that it is followed by induration at the seat of the rupture—there can be no doubt but that such rupture is followed by scar-contraction; that it is the usual cause of congenital torticollis is extremely improbable. A partial subcutaneous rupture of a normal muscle would seem to present every requisite for quick and perfect repair. Scar-contraction never follows similar injuries in later life, nor do we find in other situations anything analogous after injury at birth. If, then, we are to accept this theory, it would seem that the supporting evidence should be very direct and conclusive, such as the recorded observations of a number of cases—from the original injury, with its succeeding induration and scar-contraction, to the persistent torticollis which is supposed to result. Such evidence, however, is not contained in the literature of the subject, although the theory—originating fifty years ago with Stromeyer[5] and Dieffenbach—has been endorsed by nearly[6] all subsequent writers, gathering weight, it would appear, by reiteration, rather than from actual investigation. It should be stated that this theory of the origin of congenital torticollis has been vigorously com-

[1] Read at the meeting of the American Orthopedic Association in Washington, September, 1891.

[2] Von Ziemssen's Handb. der allg. Ther.

[3] Bd. xxxiv. S. 32.

[4] Centralbl. f. Chir., No. 14, 1885, No. 38, 1890.

[1] Deutsche Archiv f. Chir., 1882, p. 181.

[2] Küstner: Centralbl. f. Gyn., No. 9, 1886.

[3] Bouchut: Traité prat. de Mal. de Nouv.-nées, Paris, 1875.

[4] Skrzeczka: Vierteljahrsschrift f. Gyn. u. obst. Med., 1869, S. 129. Hüttenbrenner: Lehrb. f. Kinderheilk., 1886.

[5] Handb. d. Chir., Bd. ii. S. 426.

[6] Rust's Handb. d. Chir., S. 625.

bated by Peterson[1] and flatly denied by Weiss,[2] as follows: "Ruptures of the sterno-mastoid muscles are frequent enough during labor, but they are never followed by torticollis, and it is impossible to accept the theory advanced by Stromeyer and Dieffenbach."

It is apparent that we may obtain reliable evidence on this question from two sources: cases of induration followed to their termination, and cases of supposed congenital torticollis traced back to injury and subsequent induration, if such existed.

In the records of the Hospital for Ruptured and Crippled were found eighteen cases of so-called hematoma; nine could be traced, and of these two were excluded for mistaken diagnosis—the first because the after-history seemed to point to an inflamed gland as the cause of the induration; the second because the mother is positive that no tumor was present at any time. In both instances the torticollis, that was the prominent symptom, quickly and permanently disappeared. The history and results in the remaining cases are as follows:

CASE I.—A male infant brought to the hospital on August 26, 1889, at the age of two months. Fifth child, delivered by version, arm broken in the act. Three preceding children had died during labor. Tumor, size of a hazel-nut, in the middle of the right sterno-mastoid, hard, not sensitive; noticed by the mother at six weeks; no torticollis; no symptoms. The infant died eighteen days after.

CASE II.—Male, brought on August 16, 1889, at the age of three weeks. First child; delivered by forceps after tedious labor. Tumor, size of a large almond, in the left sterno-mastoid muscle; not sensitive to pressure; noticed at ten days. No torticollis; no symptoms. The swelling disappeared in three months. Child examined at nineteen months; no trace.

CASE III.—Male, seen August 28, 1890, at the age of five weeks. First child; forceps delivery after difficult labor. Tumor, size of a small pigeon's egg, in the middle of the left sterno-mastoid; noticed at three weeks. No torticollis or other symptoms. The swelling disappeared in three months. Examined at the age of nine months; no trace remaining.

CASE IV.—Female, brought September 16, 1890, at eleven weeks. First child; breech presentation. Delivered by a midwife with some difficulty. Tumor in the middle of the right sterno-mastoid, size of a hazel-nut; noticed at eight weeks. No torticollis. The induration disappeared in four months. Examined at eight months; no trace.

CASE V.—Male, seen May 2, 1891, at two months. Breech presentation, spontaneous and easy labor. Tumor size of a hazel-nut in the upper third of the right sterno-mastoid; noticed at three weeks. A gurgling respiration was apparent when the child nursed the left breast. There was no torticollis, though slight resistance on extreme tension of the affected side.

Examined at the age of six months. No torticollis or restriction of motion. No symptoms. Tumor slightly smaller, otherwise unchanged.

CASE VI.—Male, brought July 31, 1891, at seven weeks. Third child, transverse with arm presentation, delivered by version and forceps. Complete paralysis of the right brachial plexus; right inguinal hernia. A spindle-shaped enlargement of the middle third of the right sterno-mastoid, one-half inch in diameter, hard, not sensitive. No torticollis. No symptoms. Last seen September 5, 1891. No apparent change in the tumor.

CASE VII.—Male, seen August 5, 1891, at five weeks. First child; breech presentation, difficult labor. Tumor size of a pigeon's egg, at sternal insertion of the right sterno-mastoid; hard, not sensitive to pressure. No torticollis or other symptoms. Not again examined.

With these I now include six cases recently reported by Quisling,[1] in which the indications correspond to my own, although the actual results were not in all instances ascertained. Thus, of the thirteen cases, nine were originally breech presentations or delivered by version, two were extracted by forceps, and in two there is no history of interference with delivery. Of these cases, examined with especial reference to the subject of torticollis, in none was it present at the first examination, other than the slight limitation that might be supposed to follow a tumor of this size and character in the muscle substance, and in none of the cases traced did it follow. It should be noted, also, that there are on record other instances of complete disappearance of these tumors without succeeding deformity, as for example, cases reported by Brooks,[2] by Smith,[3] by Jacobi,[4] and many others.

Having considered the question from the standpoint of original injury, traced to recovery in all all the cases cited, we may now invert the method and examine the evidence presented by cases of congenital torticollis pointing to injury at birth as the exciting cause.

At best, such evidence is unsatisfactory, because we must depend upon the mother's statement as to the time when the affection appeared. Infants do not support the head for several weeks after birth, and unless the deformity is extreme it is not noticed until that time. If, then, an infant is brought for examination at the age of six months with a history of torticollis first noticed at four weeks, we may consider it of intra-uterine origin, or that it was acquired during the first month of life, or caused by injury at birth. If we favor the first conclusion,

[1] Archiv. f. Chir., Bd. xxx.; Centralbl. f. Gyn., No. 48, 1886.
[2] Nouv. Dict. de Méd. et de Chir.

[1] Archiv. f. Kinderheilk., Bd. xii. H. 5, 6, 1891.
[2] N. Y. Med. Record, February 27, 1886.
[3] Trans. Lond. Path. Society, iv. p. 70.
[4] Archives of Pediatrics, March, 1888.

then congenital torticollis must be divided into two classes.

First, cases of slight deformity, with no pain and but little spasm, except on extreme tension of the contracted parts, the contraction not being limited to the sterno-mastoid, but all the lateral tissues being involved. The resistance is not marked and the deformity can be easily overcome in a short time by stretching and manipulation. These cases are very similar to the mild condition of talipes calcaneus or of incomplete extension of arms or legs, equally amenble to treatment, whose origin would seem to be a constrained position *in utero*, leading to general shortening of tissues on the one aspect, with weakening and lengthening on the opposing surface.

The second class is composed of cases where the deformity is more marked. It cannot be overcome by simple means, but persists and increases. The sterno-mastoid may alone be affected, or the posterior group of muscles, with compensatory curvature of the spine and displacement of the scapula, as in one case now under observation. Here, we may infer, there is an actual arrest of development or muscle-degeneration, arising, it may be, from causes more complex than appear in the preceding cases.[1]

In regard to rupture of muscle as a possible cause, it may be said that the tumor of true hematoma is so prominent when the child turns the head, that it could hardly escape the mother's notice, and her statement in this regard may be accepted as final. During the past six months I have had the opportunity of examining four cases of congenital torticollis in young infants, three of the first class and one of the second. Although there was a history of transverse presentation in one of the milder cases, in none of these, nor in those seen in later life, was there history or evidence of hematoma or of difficulty in delivery or probability of injury at birth.

In considering the significance of hematoma, so called, several sources of error should be indicated, as leading to the present confusion on this subject:

1. A muscle shortened *in utero* may be ruptured at birth, thus presenting a deformity where the induration is a coincidence and not a cause.[2] Such a case was reported by Bruns[3] at the last Congress of German Surgeons.

2. An inflamed gland, adherent to the muscle, with torticollis from nerve irritation, may be mistaken for hematoma, as in the case mentioned.

3. Similar enlargements may in certain instances be of other origin than injury—such as fibrous, sarcomatous,[4] or syphilitic tumors, arising, it may be, *in utero*. Cases reported by Graser, Taylor,[1] Hadra,[2] and Holmes[3] would seem to support this view.

It is possible, too, that injury in a tuberculous or syphilitic child might give rise to a myositis sufficiently exaggerated to cause permanent arrest of development and actual shortening.

In regard to injury in general, this is undoubtedly an occasional cause of acquired torticollis. It might operate at birth as in later life, and hematoma might be a coincidence, or we may fancy that fibers of the spinal accessary nerve might be involved in the induration following muscle rupture, with irritative spasm as a result. These, however, are simply conjectures, and are entirely distinct from the question of scar-contraction that we are considering. It may be objected that the negative evidence presented is of true value, compared with positive observations to the contrary, but it must be remembered that we are considering the usual and not the exceptional causes of wry-neck, and that neither Stromeyer nor any of the succeeding writers who have endorsed this theory have presented a single undoubted case in its support.[4] Of the hypothesis, then, that explains the origin of congenital torticollis by muscle rupture, myositis, scar-contraction, and permanent shortening, we may conclude that it is simply an assertion unsupported by evidence. Further, I am convinced that injury at birth, of whatever nature or extent, is a possible, and not a probable, factor in the etiology.

From the hospital records of the past nineteen years I have collected 264 cases of wry-neck. During this time[5] upwards of 3400 cases of congenital and acquired club-foot came under observation—a comparison that will show the relative infrequency of the affection under consideration.

The following is a brief summary of some of the points of apparent interest.

Of the 264 cases 32 may be considered as congenital, with the reservation before mentioned. As to sex, 155 were females and 109 males, which would tend to disprove the statement that the affection is much more common in males than females. In 77 it might be considered as acute, and in 60 chronic, in 48 having existed for from one to twenty years.

Excluding congenital cases, the duration of the affection was mentioned in 137 instances.

The affected side was mentioned in 187 instances. In 98 it was on the right, and in 97 upon the left side, in contrast to the assertion that it is much

[1] Archives de Tocologie, xv. p. 494.
[2] Rennecke: Centralbl. für Gyn., No. 22, 1886.
[3] Centralbl. für Chir., No. 26, 1891.
[4] Graser: Münch. med. Wochensch., No. 13, 1887.

[1] Trans. Lond. Path. Society, xxvi. p. 224.
[2] N. Y. Med. Record, January 23, 1886.
[3] Diseases of Childhood and Infancy.
[4] Peterson: Zeitschrift f. orthopäd. Chir., B. i. H. 1.
[5] Townsend: "Statistical Paper on Club-foot," Trans. N. Y. State Med. Soc., 1890.

more frequent on the right than the left side. Early childhood is the time of greatest susceptibility, but ten cases are noted at more than eighteen years of age.

In 106 cases of acquired torticollis the cause seemed apparent. Of these nearly 50 per cent. might fairly be classed as from cervical gland irritation, often after some contagious disease.

Age and sex of patient when first seen:

Age.	Males.	Females.	Total.
Congenital (?)	14	18	32
6 months or less	4	4	8
1 year	4	5	9
2 years	7	9	16
3 "	3	4	7
4 "	7	9	16
5 "	11	13	24
6 "	9	14	23
7 "	9	15	24
8 "	9	10	19
9 "	3	17	20
10 "	13	7	20
11 "	2	8	10
12 "	2	7	9
13 "	2	3	5
14 "	1	4	5
15 "	3	2	5
17 "	..	1	1
18 "	1	...	1
Over 21 years	5	5	10
Total	109	155	264

The duration of acquired torticollis when the cases were first seen:

	Acute.	Chronic.
1 month or less	49	...
2 months or less	20	...
" "	8	...
6 " "	...	17
From 6 months to 1 year	...	13
" 1 year to 2 years	...	8
" 2 years to 3 years	...	7
" 3 " 4 "	...	...
" 4 " 5 "	...	7
" 5 " 6 "	...	1
" 6 " 7 "	...	4
" 7 " 8 "	...	1
Of 12 years' duration	...	1
Of 20 " "	...	1
Total	77	60 = 137

The apparent causes of torticollis, as noted in the records, were:

	Cases.
Enlarged cervical glands	5
Suppurating cervical glands	22
" glands following scarlet fever	11
Torticollis following scarlet fever, condition of glands not noted	7
Torticollis following diphtheria	4
" " mumps	5
" " measles	1
" " sore-throat	4
Suppurating otitis	3
Toothache	1
From cellulitis of neck	2
	65

Other causes were:

	Cases.
Cicatricial, following burns	3
Caused by injury of the neck	14
Probably of congenital origin	32
	49

Torticollis was associated with

Rheumatism	9 cases.
Fever	3 "
Malaria	4 "
Total	16 cases.

Torticollis was associated with disease of the nervous system as follows:

Chorea	3 cases.
Epilepsy	1 case.
Cortical irritation	1 "
Hysteria	1 "
Infantile hemiplegia	1 "
Meningitis	1 "
Spasmodic torticollis	1 "
Total	9 cases.

That duration of the affection is in itself a very potent factor in prognosis is illustrated by the in-patient records of 39 cases; 17 were admitted when the deformity had persisted for less than six months. Of these 10 were cured, 4 were improved, and 3 were not improved. Of 15 cases of more than six months' duration none were cured, 6 were improved, and 9 were not improved.

ACUTE CASES.

Sex.	Age.	Duration.	Supposed cause.	Duration of treatment.	Result on discharge.
M.	15	3 days.	Cold.	3 weeks.	Well.
F.	9	4 months.	Abscess of angle of jaw.	10 months.	Not improved.
F.	9	3 months.	Measles.	4 months.	Well.
M.	8	2 weeks.	Injury.	4 months.	Much improved.
F.	9	3 weeks.	.....	4 months.	Much improved.
M.	9	2 months.	Abscess at neck.	4 months.	Well.
F.	8	2 months.	Mumps.	14 months.	Much improved.
F.	5	1 month.	.....	3 weeks.	Well.
F.	9	6 weeks.	Sup. glands after scarlet fever.	4 months.	Well.
F.	8	2 months.	Scarlet fever	3 weeks.	Well.
M.	8	1 month.	Injury	6 weeks.	Well.
M.	6	4 months.	Scarlet fever	15 months.	Not improved.
M.	4	5 months	.....	9 months.	Improved.
M.	7	2 weeks.	Injury.	1 year.	Well.
F.	9	3 months.	Abscess of neck.	2 years.	Well.
F.	10	3 months	Abscess after scarlet fever.	2 months.	Well.
F.	9	2 weeks.	Spasmodic torticollis.	1 month.	Well.

Results.

Well, 10 Average duration of treatment, 3 months.
Improved, 4 } " " " " 11 "
Not improved, 3 }
Total, 17

Chronic Cases.

Sex.	Age.	Duration.	Supposed cause.	Duration of treatment.	Result on discharge.
M.	10	9 months.	Cold.	1 year.	Much improved.
F.	14	Long.	Measles and mumps.	4 months.	Not improved.
F.	9	5½ years.	Enlarged glands.	3 months.	Not improved.
M.	9	7 years.	Scarlet fever.	3 months.	Not improved.
M.	7	2 years.	Myositis ossficans [*sic*].	1 month.	Not improved.
M.	8	7 months.	Enlarged glands.	6 months.	Much improved.
F.	8	1 year.	Nystagmus, hysteria, etc.	14 months	Much improved.
F.	12	2 years.	Meningitis.	6 months.	Much improved.
M.	10	5 years.	Injury.	5 months.	Not improved.
F.	6	Long.	.....	7 months.	Not improved.
F.	12	8 years.	Scarlet fever	4 years.	Not improved.
F.	8	1½ years.	Cervical abscess.	4 months.	Not improved.
F.	13	6 years.	After convulsions.	.....	Not improved.
F.	13	1 year.	.....	9 months.	Improved.
M.	10	9 months.	Cervical abscess.	9 months.	Much improved.

Results.

Well, None.
Improved, 6 Average duration of treatment, 8 months.
Not improved, 9 " " " " 9 "
Total, 15

It should be noted that with few exceptions these patients were treated at a time when operative interference was not recognized as an attribute of orthopedic surgery as practised at this institution, otherwise every recognized method of treatment seems to have been employed, in most instances for many months. Of four cases of long standing treated recently by open incision, one was cured, two nearly cured, and one improved, the average stay in the hospital being but three weeks.

It seems fair to assume that there is an actual arrest of development in a contracted muscle, and that the more persistent the irritation, the more rapid the growth, the more marked will be the deformity. To overcome the contraction of such a muscle it must be overstretched to a degree corresponding to the amount of previous shortening. In the neck this is almost impossible by mechanical means when the affection has become chronic in character. This affords the rational indication for treatment: to hold the head by some appliance in perfect position from the outset of the affection when rectification is easy, especially if it appears to be caused by the presence of inflamed glands, which may persist long after the original source of irritation has been removed, not alone because rest is the proper treatment for inflamed glands, or for the relief of the strain upon the nervous system of a painful deformity of this character, in itself an important factor, but that we may not have the deformity-habit with shortened muscles and fascia to deal with when active contraction is no longer present. The removal of enlarged or suppurating glands, especially if they lie about the motor point of the contracted muscle, should certainly be considered. As this often necessitates a division of the sterno-mastoid we may at once take away the cause and remedy the result by this procedure. My time will not allow me to speak of other causes of wry-neck or of general considerations in treatment which must be governed by the indications in the individual case. They are sufficiently described in works upon this subject.

The induration that follows muscle-rupture usually disappears in from two to six months; if deformity is present, greater than may be explained by the character and size of the tumor, it is probably of intra-uterine origin and should be treated on the principles that apply to that affection—and, with certain modifications, to the acquired form that has persisted for any length of time; that is, free and early division of all contracted tissues that do not rapidly yield to milder methods, followed by the careful after-treatment which all cases of this character require. From the evidence presented, I think we may conclude, contrary to the prevailing theory, that the causes of congenital wry-neck operate in a majority of cases before birth rather than during delivery. That acquired torticollis in very young children may be as persistent in duration and as disastrous in its results as the congenital variety—the age of the child, the persistence of irritation, the arrest of development in the contracted parts, and the rapidity of growth being the determining factors—and that here, as elsewhere, the prevention of deformity in the first instance, or its rapid rectification if seen in the later stages, should be the object of our therapeutic efforts.

TUBERCULOSIS OF THE BONES AND JOINTS.[1]

By A. H. LEVINGS, M.D.,
of Appleton, Wis.

From the time of Hippocrates many authors have given descriptions of joint-disease that are easily recognized as tuberculous. Richard Wiseman, of London, in 1734, gave what was probably the best description up to his time, calling the disease "white swelling." He thought the condition the result of scrofula. Benjamin Bell and R. Brown Chester believed that the tumor albus was due to two different causes—the one scrofula, the other rheumatism and trauma. In 1807 Samuel Cooper stated that in healthy well-nourished persons the prognosis of joint-inflammations was good, while in scrofulous individuals the tumor albus resulted. In 1842

[1] Read before the Wisconsin State Medical Society, June, 1891.

Rokitansky taught that the great majority of these tumors were due to tuberculosis of the synovial membrane. Then Virchow demonstrated that the worst forms of tumor albus, especially those of the knee, were due to miliary tubercles; and in 1865 R. Volkmann demonstrated the tubercles of tuberculosis in joint-disease.

Tuberculous processes in bone are usually seated at the epiphyseal ends of the long bones, in the vertebræ, in the spongy bones of the carpus and tarsus, and less frequently in the long bones of the hand and foot (spina ventosa). Bones are infected in two ways: First, the bacilli that have gained entrance to the blood and general circulation may be carried directly through the nutrient artery to the epiphysis of a long bone, and becoming arrested in some small terminal branch escape through the walls of the vessel, and form tubercles in the spongy tissue; or, second, small particles of caseous matter, usually in the lungs, ulcerate their way into a pulmonary vein, and are carried to the heart, and by the arterial system are carried to some small terminal artery in the epiphysis of a long bone, or in a spongy bone, in which they lodge and form a tuberculous deposit. (Krause.)

The election of the epiphyses of long bones and the short spongy bones as the usual seats of tuberculous deposit may perhaps be explained by the blood-supply. As growth takes place at the epiphysis, this part receives more blood than does the shaft. The bloodvessels are larger than those supplying the compact bone through the periosteum. The same may be said of the spongy bones. Bacilli or caseous emboli having been implanted in the epiphysis of a bone, form tubercles, and, coalescing, these produce nodules that may be the size of a hazel-nut or walnut. The nodules may be hemmed in by sclerotic bone and healthy granular tissue, and a cure effected, or softening and suppuration may sooner or later occur. The bone-cavity may be lined by a pyogenic membrane made up almost entirely of tubercles held together by fibrinous deposit.

Whether the surrounding bone is free from deposit, or there is no pyogenic membrane, it is in either case usually infected with caseous material, so that there is an easy means of systemic infection. Often the tuberculous nodule undergoes degeneration, and is separated from the surrounding bone by inflammation, resulting in a sequestrum. These sequestra may and often are found in the epiphyseal ends of the two bones entering into the formation of a joint. In a case of tuberculosis of the knee-joint, in which resection was recently performed, such sequestra were found in the outer condyle of the femur and in the head of the tibia, each about the size of a hazel-nut.

In cases in which the tuberculous nodes undergo softening and suppuration they generally, by a process of ulceration, reach the surface of the part through the periosteum, producing a fistula, or, breaking into the joint, infect the synovial membrane, giving rise to tuberculous synovitis, with perhaps destruction of the cartilage and caries of the bone-surfaces.

Disease of the short bones of the foot is common at all ages, while in children disease of the bones of the hand is rare. Caries of the ribs is more common than that of the flat bones, and is frequently a result of tuberculous pleurisy. In a case of tuberculous pleurisy, with fistula, recently operated on after the method of Schède, five ribs were found carious.

Tuberculous disease of the vertebræ usually involves their anterior surfaces. The vessels penetrate the vertebræ perpendicularly to their surfaces, and a growth of cells, in the form of granulation tissue, surrounds the vessels as they enter the bone, destroying it and producing cavities, usually of small size. Many of these may be formed in a single case; two or more may coalesce, forming a large cavity; in this way much of the anterior surface of a vertebra may be destroyed. The superincumbent weight of the body forces the vertebræ together, and the characteristic deformity of Pott's disease is occasioned. The disease may terminate favorably by a splint of bone being thrown out on the anterior surface of the vertebra, beneath the anterior longitudinal ligament; or suppuration may take place and the pus may follow the spine downward, and give rise to a large abscess in the abdomen.

Joints are infected in two ways: First, by a deposit that has formed in the epiphysis breaking through into the joint and infecting the synovial membrane; and second, by a primary infection of the synovial membrane. It is also thought that a joint may become infected from a deposit in the epiphysis through the lymphatics.

The tuberculous processes in the synovial membrane are of two kinds: In the one there is an abundant growth of tuberculous and connective tissue (granulation tissue); the synovial membrane is much thickened, with little tendency to caseous degeneration; there is usually but little fluid in the joint. In the other there is but little granulation tissue, but an abundant formation of pus, which may break through the capsule and give rise to a peri-articular abscess.

According to a table compiled by Krause, in 77 per cent. of all cases of tuberculosis of joints the disease commences primarily as a deposit in the bone.

Caries sicca. It is only recently that this form of joint-disease has been known to be of tuberculous origin. The disease commences in the synovial membrane, with the formation of little or no pus.

There is a thin layer of granulation tissue in the synovial membrane, which advances into the cartilages, destroying these, and often also the articular surfaces of the bones. This form of disease is usually found at the shoulder- or hip-joint.

Trauma is the most frequent exciting cause of tuberculous processes in bone. The predisposing cause is scrofula. Much has been written, regarding the relationship of scrofula to tuberculosis. An individual is scrofulous when there is a certain constitutional condition—a tendency to chronic inflammation and suppuration of particular tissues—even though he should be apparently perfectly healthy; while one should not be called tuberculous unless there is somewhere in the system a tuberculous process (Krause). Given a child predisposed to tuberculosis, having a scrofulous diathesis, not well nourished, a slight injury, a twist or wrench of a joint, a slight laceration of tissue with extravasation of blood, provides a favorable nidus for the growth of bacilli; and at this point a tuberculous inflammation is likely to be established. Now, a well-nourished person, without this predisposition, might receive a similar injury and escape a tuberculous process. If the injury is more severe—perhaps a luxation or a fracture—healing takes place, even in one predisposed, without the development of a tuberculous process. This is accounted for in the case of luxations by the fact that the rupture of the synovial membrane gives the fluids in the joint an opportunity to escape, thus relieving tension and the resultant irritation. In the case of fractures the cell-proliferation, which is very great, and that occurs as a part of the healing process, prevents the growth of the tubercle bacillus at the seat of injury.

Age is an important factor. Tuberculous processes in bones and joints are much more common in children than in adults.

When a tuberculous deposit has taken place in the epiphysis of a long bone or in one of the small bones, there will be more or less pain on pressure; and if the deposit approaches the periosteum there will at this point usually be edema. The affected joint is more or less painful on motion, and is to some extent fixed. The patient is indisposed to use the member. There is little or no fever, and usually no effusion into the joint.

Should the tuberculous process attack the synovial membrane there will usually be an effusion of serum or of serum mixed with pus. The temperature of the joint as well as of the body is increased. If pus forms, the joint becomes swollen; the symptoms are intensified by use of the joint, and with rest more or less disappear. One of the characteristics of the disease is the ever-changing character of its symptoms.

The swelling may be within or without the joint; if within it is the result of effusion or of the growth of granulation tissue, and occasions semi-fluctuation. The abnormal position in which an inflamed joint is held was by Bonnet ascribed to the effusion, the limb assuming the position allowing the greatest degree of distention of the capsule. To some extent this is true, but muscular contraction from irritation of the synovial membrane also plays an important part. The skin covering the joint is white ("white swelling"), and it is here and there marked with blue veins.

In many cases, especially in children, the prognosis of tuberculous processes in bones and joints is favorable. The granulation tissue becomes denser, is hemmed in by connective tissue which contracts and cicatrizes. If the process affects a joint this becomes more or less distorted and ankylosed, even in cases in which pus has formed. Healing may take place by absorption of the pus, or after its spontaneous discharge. Cases of Pott's disease in which a cure has been effected, with or without deformity, are familiar to everyone.

In other cases of tuberculosis of the bones and joints, in consequence of excessive suppuration, high fever and loss of appetite, especially if the process is in one of the larger joints, the patients become anemic, lose weight, and die without other organs becoming affected, but with the general appearance of phthisis.

Again, as in all cases of chronic suppuration, especially in bone, the patient may become albuminuric, suffering from amyloid degeneration or parenchymatous inflammation of the kidneys. One must conclude that as a result of suppuration in bone, chemical substances are produced, taken up by the lymph-channels, distributed through the blood, and in circulating through the kidneys produce amyloid degeneration. Tuberculosis of a joint may be associated with basilar meningitis, tuberculosis of the lungs, or acute miliary tuberculosis. This is especially common in children. These complications or associations may follow operation, as by resection or curetting a fistulous tract, a vein or lymphatic may be opened during the operation, and the germs gaining an entrance are distributed throughout the system.

In my own practice during the past year two cases of acute miliary tuberculosis have followed operations on tuberculous bone. One was a case of resection of the hip, in which the acetabulum was much diseased, and the other a case of curetting several of the tarsal bones and fistulous tracts.

Krause mentions several interesting cases: In one, a boy fourteen years old, strongly built, suffered from a tuberculous process in the lower end of the radius. An incision was made down to the bone, which was opened with a chisel, and the deposit cut

away with a sharp spoon. Everything progressed favorably until the fourteenth day, when the boy complained of headache. In quick succession all the symptoms of basilar meningitis appeared, and he died four weeks after the operation. The autopsy disclosed a tuberculous meningitis, as well as an eruption of fresh miliary tubercles in nearly all the internal organs. Nowhere was there a caseous deposit to be found. Acute miliary tuberculosis following an operation can only be attributed to the operation when an autopsy shows that there were no caseous deposits in the body.

TREATMENT.—The general system should be improved by means of nourishing food, fresh air, cold baths and tonics. If the joint is irritated or inflamed it should be put at rest. Nothing answers a better purpose than the plaster-of-Paris cast. It not only fixes the joint, thereby relieving it of the irritation of motion that tends to keep up the inflammation, but it also exerts equable pressure, thereby maintaining the superficial circulation.

When a joint—the knee or hip, for instance—is much inflamed, extension should be applied, especially if there are spasmodic muscular contractions. This relieves the joint-surfaces of undue pressure, and prevents the spasmodic muscular contractions that are not only injurious, but also prevent sleep and wear the patient out with pain. In Pott's disease of the spine, Sayre's plaster-of-Paris jacket, with the jury-mast in suitable cases, produces the necessary extension and fixation, and in the great majority of cases will effect a cure. In all cases of tuberculous joints the cure may be but temporary; there is always danger that some trauma, a twist or a wrench, may bring the latent and apparently healed process into new life. It is probably true, however, that a considerable number of cases of this class are due to new infection, and not to the rekindling of the old inflammation. In cases of cure, with false or true ankylosis, even if the position of the limb is not good, the greatest circumspection should be used before the ankylosis is broken up, as the resultant injury may light up anew the old tuberculous process.

The treatment of tuberculous joints and tuberculous abscesses with iodoform-glycerin injections was formulated by Billroth and Mikulicz. A trochar is thrust into a tuberculous joint containing pus, the pus allowed to drain off, and the joint is washed out with a ten per cent. solution of boric acid. A ten per cent. emulsion of iodoform in glycerin is then injected into the joint. Krause gives the maximum quantity that should be injected at a time as 100 grams (3 ounces). After the injection, the joint is freely moved in every direction for the purpose of bringing the iodoform in contact with every part of the joint-surfaces. In cases in which suppuration has not been established, the washing out may be dispensed with. The injections are made every four weeks, and both in diseased joints and in cold abscesses are often followed by the most happy results. The iodoform applies itself to the internal wall of the abscess, destroying the tuberculous tissue and stimulating a growth of healthy granulating tissue that cicatrizes. Bruns and Nauwerck examined the wall of a tuberculous abscess one week after an injection of iodoform, and found that the tubercle bacilli had disappeared, and that healing was taking place.

The following case well illustrates the beneficial effects of iodoform injections:

E. H., three years old, was brought to me with Pott's disease of the lower dorsal and upper lumbar vertebræ. There were lameness and dragging of the right leg, and flexion of the thigh on the pelvis. There was a continual elevation of temperature. Sayre's plaster-of-Paris jacket was applied, and worn for four years, being renewed every three months. At the end of two years, when a jacket was being applied, a swelling of considerable size was noticed on the right side of the spine below the ribs. At the end of three months it had increased considerably in size, and a small trochar was thrust into it, and one and a half pints of pus obtained. Three ounces of iodoform emulsion were injected through the canula into the abscess cavity. Five weeks later one pint of pus was withdrawn and iodoform emulsion injected. Eight weeks afterward six ounces of serum, almost entirely free from pus, were withdrawn The swelling then entirely disappeared, the boy grew fat, lost his lameness, and has been perfectly well since.

Billroth has recently recommended free incision of abscesses, the removal of all diseased tissue with a bit of iodoform gauze, and the use of the sharp spoon for carious bone and fistulous tracts; the divided fascia and muscles are then united with interrupted sutures, and the skin with a continuous suture, leaving an opening through which to fill the cavity with the iodoform emulsion. The results are said to have been favorable.

What the final verdict of the profession will be, as regards the healing power of tuberculin on tuberculous processes in bones and joints, it is difficult at present to determine. That it is not the great panacea for all tuberculous processes that had been hoped must be apparent to all that have used it. That it is without benefit, and in acute cases with high fever even harmful, I believe is also true. But in chronic cases, especially where fistulous openings exist, it may and probably will prove of great help to the surgeon, either with or without a subsequent operation.

For the primary tuberculous deposit in bone, an early operation is indicated, to prevent, if possible, infection of surrounding bone, neighboring joints,

or, what is still more to be feared, the occurrence of acute miliary tuberculosis. If a fistulous tract exists, it leads the way to the diseased bone, which with the greatest possible care should be cut away with a sharp spoon, removing all the diseased tissue, both in the bone and in the fistulous tract. If possible, the operation should be performed on a bloodless limb, to reduce the liability to infection through the veins and lymph-channels to the minimum.

Resections of the synovial membrane or of the bones should only be undertaken when it is apparent that more conservative methods will not succeed. Better results from conservative methods may be expected in children than in adults. If possible, resection of an epiphyseal cartilage should always be avoided in children, since it prevents the proper growth of the limb. In cases of suppuration within a joint, with high fever, loss of weight and increasing weakness, the joint should be opened and all diseased tissue removed. If the disease is confined to a portion of the synovial membrane or cartilage, only these parts should be removed. Resections proper should be reserved for more extensive disease, and amputation for extreme cases, in order to save life.

THE SUBCUTANEOUS USE OF HYDRARGYRUM FORMAMIDATUM SOLUTUM IN SYPHILIS.[1]

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In 1882, Liebreich, of Berlin, suggested the use of a subcutaneous injection of a 1 per cent. solution of a preparation that he called hydrargyrum formamidatum. His claim for its usefulness in comparison with other preparations was that, being a neutral solution, there was little or no danger of abscesses following its injection, and that there would be less pain. In order to learn if the solution is properly prepared, it should be tested with an aqueous solution of iodide of potash, 1:20, added drop by drop: no red color, or red precipitate, should appear, but only a yellow cloudiness. It should have a neutral reaction, and should not precipitate a 1 per cent. solution of albumin.

The injections are made deeply into the gluteal muscles, the patient standing, the needle being introduced obliquely into the muscles from below rather than at right angles to them. The number of injections to be given will vary in different patients. Usually twenty are sufficient to effect a cure, or at any rate to show if the method is to be of any use. In acute syphilis the injections begin to show their good effect after the fourth or sixth, but a longer time is required in chronic cases. They may be given every day, every other day, or twice a week. If there be no hurry in the case, one every other day is sufficient.

The pain varies in different persons, and even after different injections in the same person. It begins almost immediately, and the side injected remains sore for some hours. I inject first one buttock and then the other. I have never made the injection in any other part but once, and this was into the thigh of a woman. This, though not followed by an abscess, was very painful for several days; this method was, therefore, not repeated.

I will give a history of a few of my cases:

Case I.—T. J., aged sixty years, married, came to me in January, 1884. He first had signs of syphilis ten years before, and had been thoroughly treated with mercury and potash at the time. All symtoms disappeared within a year, and since then his wife has given birth to one apparently healthy child. When first seen by me the left hand was swollen and indurated, there being no pitting on pressure. The skin was not pliable or elastic, and the swelling and induration extended up the arm to the elbow. This condition of the arm had been coming on for many months, the size of the hand gradually increasing and the swelling extending further up the arm until the limb could be very little used, and was carried in a sling. There were no pain, redness, or appreciable swelling of the lymphatics. On the palms of both hands were large and small characteristic maculæ with whitish crusts upon a reddened base. The soles of the feet showed similar spots, with a small, indolent ulcer between the little and next toe of the right foot. There was chronic catarrh of the throat and nose. I put him on the usual formulæ of mercury and potash, trying them together and separately and in different combinations until he refused to take any more. No good had been gained by this treatment. I then commenced the subcutaneous injection of 15 ♏ of a 1 per cent. solution of hydrargyrum formamidatum every other day. The injections were made deeply into the gluteal muscles, the right and left sides being taken alternately. After the eleventh injection he began to show evidences of mercurialism, both in the odor of the breath and the puffiness of the gums, and the injections were stopped for a week. The buttocks were sore, but there was no induration anywhere, and no symptom of an abscess. Six more injections were then given, one every day, when they were stopped altogether. This made seventeen injections in all. After a week's intermission the spots on the hands and feet had entirely disappeared, and the ulcer of the toe had healed. The condition of the mouth was improved, and in another week, without further treatment, had even still further improved. The induration of the hand and arm was much lessened, so that the sling could be given up, and the hand used quite naturally. I followed this case for six subsequent years, and saw no return of the symptoms described. The man died as a result of chronic alcoholism.

[1] Read at the meeting of the American Dermatological Association, held in Washington, September 22–25, 1891.

CASE II.—January 2, 1884, K. B., aged forty-five years, unmarried, consulted me, denying any history of chancre or venereal disease. There was the eschar of a suppurated gland in the left groin, the cause of which he could not or would not explain. The palms and soles of both hands and feet were almost entirely covered with a whitish, slightly scaly eruption. There was no itching, but there was intense dryness. Some of the fingers and toes had ugly-looking fissures between them. There was a slight eruption of a similar kind on the outside of both elbows, and a few copper-colored spots scattered over a very hairy chest. The trouble on the hands had existed for ten years, and was then worse than ever before. The patient was a high liver, a popular diner-out, and "a great man for women." The condition of his hands was such that he always wore gloves, and many comments upon this eccentricity from high and low society worried him. He had tried many remedies for eczema, both internal and external. I persuaded him, with much difficulty, to try the subcutaneous injections of mercury, besides giving him a mild mercurial salve to rub upon his hands at night before putting on his gloves.

On February 2d the first injection was made, and it was repeated every other day until twenty-one had been given. During the treatment I could not keep my patient from any of his many excesses, and he would not agree to the idea that he had ever had syphilis. The result was unfortunate in one sense, because, instead of the hands getting well, it was the feet, elbows, and chest that did so, while the hands remained very much the same. He told me that he was tired of the injections, and was going to try someone else not a regular practitioner. I met him within the last two months, and he was still wearing his gloves.

CASE III.—In November, 1885, H. L., aged twenty-three years, unmarried, son of a physician, was brought to me by his father for a diagnosis. He denied ever having had a chancre, or ever having been exposed to the danger of one. He was persuaded to strip off his clothing, when there was disclosed a perfectly typical universal roseola. The remains of an indurated chancre was found upon the prepuce. The young man was a graduate druggist, and, it was found out, had been dosing himself with mercury, potash, sarsaparilla, and other things, until his digestion was much impaired. All medicine was stopped, and he was put upon the injection of 20 ♏ of hydrargyrum formamidatum every day. After receiving ten, they were stopped for four days and then continued. After the fourth injection the roseola faded rapidly, and had disappeared after the tenth. They were continued on account of sore-throat and of mucous patches in the mouth. After the sixteenth injection he stopped coming, contrary to my advice, although all his symptoms had disappeared.

A year later he came to ask me if he could get married, and was much disturbed when I told him he ought not to do so. His symptoms were enlarged glands and chronic sore-throat, and I advised him to go through another course of injections. This he did not do, but within a month I received cards announcing his wedding. Four years after this time I met his father, who told me that his son had a child three years old, which was apparently healthy.

CASE IV.—In May, 1886, L. J., aged thirty-two years, unmarried, thin, anemic, nervous, and dispirited, was brought to me in consultation. He confessed that he had had a chancre two years before, followed by an eruption. He had been in the hands of many physicians, and at last had put himself under the charge of a quack, who packed him in moist clay and kept him thus for days at a time. He came to me in bad condition, with broken-down gummata on his neck, face, and right leg, and with a chronic sore-throat. A day or two afterward a severe attack of neuralgia of the left side of the head was duly followed by one of the worst attacks of herpes zoster I ever saw. The eruption extended from the eyebrow over the left side of the head as far down as the ear. Morphine was the only measure that relieved the pain, which lasted for three weeks. The vesicles became pustules, and finally left deep, copper-colored scars that have never faded away.

Injections of mercury were begun after this attack, and given every third day, until ten had been given. The results were decidedly beneficial, but they were stopped on account of my absence from town for six months, and his desire to go to the Hot Springs of Arkansas. He is at present as well as a delicate man can be.

CASE V.—In October, 1890, S. W., aged forty years, unmarried, was brought to me in consultation. He was a tall, muscular, healthy-looking man, who confessed to having had a chancre two years before. He had been put through the regular course of mercury and potash, and was then suffering from dyspepsia and intolerance of any drugs. There were *psoriasis palmaris et plantaris*, moist condylomata on the scrotum, with one obstinate mucous patch on the right side of his tongue.

Like others he had gone the round of regular and irregular physicians, so that something other than the usual course had to be pursued. Subcutaneous injections were begun, the dose being 20 ♏ three times a week. His tolerance for mercury was great; he received sixteen injections before much improvement was manifest. They were then increased to 30 ♏ three times a week. After receiving thirty, all the syphilitic symptoms had disappeared, and he was told that he needed no more. He insisted, however, that as he had not been so well since he first contracted the disease, he must have further treatment. He came twice a week at first, then once a week, then once in two or three weeks, until he had received over a hundred injections. I have not now seen him for nearly six months.

CASE VI.—In January, 1891, W. A., aged thirty-three years, unmarried, consulted me, having had a chancre nine years ago. He had been treated in the usual way ever since with mercury and potash. One of our throat specialists, who was treating him for syphilitic sore-throat, sent him to me to see his hands and feet. The palms and soles were covered with a macular, syphilitic eruption—so-called psoriasis. There were also several indurated papules

upon the scrotum. After stopping all medicine by the mouth, he was put upon the subcutaneous injection of 20 m of hydrargyrum formamidatum every other day. They had to be discontinued after the sixth injection, because he was clearly becoming ptyalized. He had to leave town at this time, and I did not see him for several weeks. While away he took no medicine, and when he reappeared his hands and feet had cleared up, the papules on his scrotum had disappeared, and he had no trouble with his throat. I wanted to stop the injections, but he insisted upon going on with them from time to time, as opportunity afforded, until he has received nearly fifty. Like the preceding case, he feared another relapse such as he had previously experienced.

Besides these and many other cases in private practice, the injections have been used by me in dispensary practice, and with equally good results. There are, however, some cases of syphilis that at first seem to defy any treatment. I call to mind one case of malignant syphilis in a man aged twenty-three, which every form of mercury or potash failed to affect. The large tubercular syphilide that covered the patient's body from head to foot was only aggravated by the injections. It was necessary to put him on cod-liver oil and tonics alone, and to dress his whole body in soothing salves until the acute stage had passed. In this case subcutaneous injections did more harm than good, were very painful, and, if persisted in, might have been followed by abscesses. The patient was ultimately able to take ¼ gr. of salicylate of mercury three times a day, and is slowly recovering. On the other hand, a stable-boy, nineteen years old, with an acute macular syphilide, was so quickly cured of it that he stopped coming to the dispensary altogether. He was seen several times on the street and told to come, but laughingly said that there was nothing the matter with him.

In summing up the results of my experience with these injections, I feel that I may say that in them we have a valuable addition to the list of remedies in treating syphilis; that there is no danger of abscesses following their use, since I have never seen one after having given as many as a thousand injections; and, lastly, that in many obstinate cases they can frequently be relied upon to accomplish what no other treatment has accomplished.

CLINICAL MEMORANDA.

LIGATION OF THE EXTERNAL ILIAC ARTERY FOR FEMORAL ANEURISM.

By JAMES K. YOUNG, M.D.,
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The following case, recently under my care, presented so many features requiring surgical judgment, that although the result was unfortunate, lessons remain and may be of interest to others who may be similarly placed.

History: The patient, S. A., forty-eight years of age, was a large, muscular, colored male, born a Virginian slave, of healthy parentage. About January 15th, following an injury, a swelling developed in the right femoral region, which he described as nodulated, pulsating, and painful. About the same time his leg swelled and the sole of the foot and toes were numb and tingling. The swelling developed slowly, until it had assumed enormous proportions. On examination, in consultation three months later (April 15th), the following condition was observed: The patient was much emaciated, the expression anxious; the right thigh was enormously enlarged and intensely hard, except at its upper third, where it presented a large fluctuating swelling, the upper portion of which overlapped and obliterated the femoral fold. An expansile pulsation and marked bruit were present. The scrotum was slightly swollen and pushed far backward. The patient denied syphilis. The coxo-femoral articulation was normal. The thigh was flexed upon the abdomen, and the patient for three weeks had been unable to sleep in a recumbent position. All the superficial vessels were atheromatous. The situation of the aneurism, very high up in the Scarpa's triangle; the uncertainty of its origin, whether from the common or superficial femoral, rendered it an unsatisfactory case for compression, and its size forbade the possibility of cure by ligation of the superficial femoral below (Brasdor's operation ?). There remained the ligation of the external iliac, and this the patient consented to. Three days later he was transported thirty-three miles to the hospital, and while being transferred to a carriage before entering the train he experienced a sudden faintness, with a relief from pain, and was able to extend the thigh. It is probable that the aneurism was diffused at this time.

On the day following admission (April 19th) his condition was as follows: Pulse 100, temperature 100°, respiration 56. The thigh was hard; no pulsation or bruit could be distinguished at this time or afterward, and the temperature of the foot and lower third of the leg was below the normal. The urine contained no albumin. The entire leg was gangrenous. Here, then, was a man of forty-eight, with atheromatous arteries, a large, diffused femoral aneurism, dry gangrene of the leg, and in a condition of profound shock. Evidently there was nothing to do but to wait for reaction.

Five days later, the condition having improved (temperature 100°, respiration 40, pulse 104), it was decided to ligate the external iliac artery, control the return circulation by an Esmarch tube applied below, to open the aneurism, turn out the clots, and thoroughly pack the wound. Subsequently amputation was to be performed. Assisted by Dr. T. S. K. Morton, Dr. John B. Deaver, and Dr. Baldwin, the resident, in the presence of Drs. Wilson, Neilson, Stern, H. C. Deaver, Brinkman, McGee, and others, the external iliac artery was readily secured near its proximal position, at which point the coats of the vessel were normal. The sac was then incised and about a quart of clotted blood removed. The vessel in this locality was atheromatous. There was no hemorrhage either from the incision or from the sac; the patient reacted quickly, and the ligation wound united by first

intention in three days. The duration of the operation was sixty-five minutes. The condition was decidedly improved (temperature 98⅘°, respiration 36, pulse 102), until the following night, when, during the absence of the nurse, the patient left his bed and walked about ten yards, where he was subsequently found in a condition of syncope. Subsequently his pulse was more rapid, and difficult to obtain in the radials, his respirations were increased, and the heart-sounds over the precordia were muffled. Notwithstanding these untoward symptoms, the condition improved for three days, and the line of ulceration formed obliquely upon the perineal region. At the end of this period the general condition was not quite so favorable (temperature 100°, respiration 40, pulse 104). A line began higher up on the inner aspect of the lower third of the thigh, and amputation was decided upon. The thigh was amputated by a short anterior flap communicating with the aneurismal sac, and a long posterior flap.

Though somewhat shocked by the operation, the condition improved, and the temperature became normal—98.4°. The wound did well and the flaps united firmly, but required to be irrigated daily with an antiseptic solution on account of the communication with the sac. The general condition gradually failed, delirium of a peculiar character supervened, with convulsions, the patient snapping and biting at everything, and three days after the amputation death ensued.

On post-mortem examination, the inguinal (ligation) wound was completely and firmly united, and the flaps were firmly united, except where the drainage-tubes made their exit. Only the heart was examined, and both ventricles were almost completely filled by large, yellow (ante-mortem) clots, which were evidently the cause of death. These probably began to form on the second night subsequent to the ligation. But for this additional and irremediable condition it is probable that the cure would have terminated favorably, notwithstanding the many and difficult complications met.

UNUSUAL MODE OF TRANSMISSION IN A CASE OF DERMATITIS VENENATA.

BY J. ABBOTT CANTRELL, M.D.,
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MARY G., thirty-four years of age, was admitted into the general wards of the Philadelphia Hospital on September 24, 1890, and was removed on October 26th to the maternity ward, where she was delivered of a male infant. She continued well until the 29th, when she complained of an itching and burning sensation of the abdomen, which showed an inflamed surface, covered with vesicles and bullæ.

I subsequently learned that two nurses, one from the surgical and the other from the maternity ward, left the hospital at 2 P.M. on the 26th instant, taking a stroll through an adjacent cemetery gathering leaves and bringing a number back with them. Among the leaves were a number of ivy leaves, but this fact was not known by the nurses at this time. At 4 P.M. some of these leaves were placed on a table in the maternity ward, but in a separate compartment from that in which the patient was confined. They remained until the morning of the 28th, when they were thrown away. The nurse stated that after her return her hands were washed several times with ordinary soap and water, and when dressing the young mother her hands came in contact with the skin of the abdomen, and thus probably conveyed the ivy poison to the spot affected, as her hands, which at this time were apparently not affected, showed the eruption in a day or two. It also appeared on the abdomen of the patient at about the same time.

I saw the patient for the first time, upon invitation of Dr. Barton Cooke Hirst, the obstetrician on duty, on October 29th, two and one-half days after her confinement. I found situated upon the abdomen and surrounding the umbilicus, having a radius of full five inches, a vesicular and bullous eruption, with the whole surface swollen and edematous and covered with the characteristic yellowish-brown, gummy discharge of dermatitis venenata. Upon inquiry, I then learned the foregoing facts. After using a solution of fluid extract of grindelia robusta, two drachms to the pint of water, for about a week, the eruption entirely disappeared.

From a search through the literature of the subject I can find only one parallel case—that referred to in an exhaustive work on the subject by Dr. J. C. White, of Boston. This patient was a child of six years, that had received the poison from a servant who was himself unsusceptible to the poison. This servant had been clearing weeds, among which were some ivy vines from the garden surrounding the house, after which he had washed his hands thoroughly several times with vinegar and soap after entering the house. In the afternoon he took the child to a pond for a bath, holding him by the armpits, and afterward rubbing the axillæ and the back. In two or three days deep ulcers formed in both regions.

The point of interest in these cases is the mode of contracting the disease. It has been known for years that the poison may be absorbed by handling the leaves or by being near the vine. In the latter case there seems to be an idiosyncrasy to the disease. I believe the case of Dr. White and this one are the only cases recorded wherein the disease was contracted by the mere handling of a person affected.

SPINA BIFIDA.

BY T. A. HARRIS, M.D.,
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IN THE MEDICAL NEWS of August 8, 1891, is an article by Dr. E. P. Hurd, on the "Excision of the Spina Bifida," which recalls an operation I performed on the 23d of July, 1891, for this condition. I was asked by a country friend to see a case of spina bifida in a child about five days old. I found in the lumbar region a prominence about the size of a hulled walnut, crowned by a thin membrane. This, my friend Dr. Pricket had punctured with a sharp bistoury, allowing a small amount of serous fluid to escape, though there was no discharge from it when I saw it. The child was in vigorous health without any paralysis of the lower extremities. The body of the prominent mass consisted of integument, and was slightly pedunculated.

As a test I first tied an ordinary cord tightly around the base of the tumor. The only effect was to give the child very decided pain, certainly not paralyzing its

lower extremities, as was evinced by very decided kicking. I concluded that the spinal cord was not involved in the tumor. Removing this cord I then passed my knife around the base of the tumor, cutting through the integument, and then tied a silken cord around it, drawing it very tight, burying it in the cut I had made in the integument. This effectually shut off all circulation in the tumor, and cut off all communication with the spinal canal. I then freely scarified the membrane and the top of the tumor to allow free discharge of any fluid or blood contained in it. My suggestion to Dr. Pricket was that in four or five days he should put on another tight ligature. This he did, and in about ten days the entire mass fell off, leaving a sore spot about as large as a nickel, which in two weeks thereafter was healed, sound and well, leaving the child in apparent health. I do not think there was more than one (the last lumbar) vertebra involved. My expectation is that with the growth and development of the child the laminæ will practically close the space. I made no attempt to dissect out the membranes, but contented myself with so ligating the sac as to shut off all communication with the spinal canal, and trusted to the inflammatory action set up by the ligature to close permanently the communication with the canal. It would have been a much nicer operation to have cut off the mass and to have brought its edges together, but I did not believe that any stitches or plasters I could use would suffice to keep out weeping from the spinal canal sufficient to prevent union of the cut surfaces, having done this on the 23d of July, and immediately after August 8th. Seeing the article by Dr. Hurd has prompted me to report my case and thus to add another to the rare cases of recovery from this not very uncommon defect. I also wish to raise the question whether in the future active measures may not prove more effective in these cases than temporizing measures have in the past.

A CASE OF INTRA-CRANIAL HEMORRHAGE; AUTOPSY.

By E. KELL, M.D.,
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J., a laborer, twenty-eight years old, came under observation August 29th, at 3 P.M., suffering from alcoholism and a contusion over the left eye. The man was rational. At 5 o'clock, he suddenly became unconscious, and the left side was involved in active convulsive movements. The face was flushed, the pulse 100, the respirations 24. The head was turned to the right, the right arm flexed across the chest, with the hand closed, the right leg extended; both were motionless. The right pupil was dilated and slowly reacted to light; the left was contracted and failed to react. There was no vomiting or hemorrhage from the nose, mouth or ear.

August 30. The temperature was 99°; the pulse 70, full and bounding; the respirations normal. The right pupil appeared normal; the left was still contracted, with a feeble reaction to light. The right arm became relaxed, and when raised fell to the side. The left arm and leg still displayed a tendency to spasm. In the afternoon the patient muttered a few indistinct words. He took medicine given to him.

31st. The paresis of the right arm and leg became more decided. The left pupil was still contracted. The knee-jerk on the right was enfeebled, on the left exaggerated.

September 1. The patient could, when aroused, answer questions in an indifferent manner.

2d. There were ptosis on the right and relaxation of the same side of the face.

4th. The temperature was 101°, the pulse 104, the respirations 20. The patient made no reply to questions.

5th. The temperature was 105°, the pulse 135, the respirations 36. There were no additional developments prior to death.

The man had been a syphilitic. During his illness he had passed an excess of urine. The bowels were regular.

At the autopsy, evidences of a contusion over the left eye were found. The lungs were congested, the heart fatty, the liver fatty and congested. There was chronic parenchymatous nephritis, with acute congestion of the kidneys. The cerebral meninges were congested. Over the entire right hemisphere of the cerebellum was found a clot formed of blood poured out from rupture of the middle meningeal artery, the result of a fracture extending from the right foramen lacerum medium through the foramen spinosum, with separation of the squamo-sphenoidal suture as high as the pterygoid ridge. The interesting question arises: Why was not the hemiparesis on the left side?

CURRENT LITERATURE.

THE INFLUENCE UPON THE CHILD OF MEDICAMENTS ADMINISTERED TO A NURSING MOTHER.

Schling (*Revue Obstét. et Gynécol.*, No. 4, 1891) has made a series of observations upon children, to the mothers of whom various drugs were administered. If the infant was not put to the breast sooner than an hour after the administration to the mother of from thirty to forty-five grains of sodium salicylate, the salicylate was found in the urine of the infant. At the expiration of twenty-four hours not a trace could be found. If the infant was put to the breast too soon after the administration of the drug, not even a trace could be found. The elimination of the medicament took place simultaneously in both mother and infant.

Similar results were obtained with potassium iodide. In the infant, the elimination lasted for seventy-two hours; in the mother for forty-four hours. At the end of twenty-four hours, the mother's milk still contained potassium iodide.

When potassium ferrocyanide was administered, the reaction was evident in the maternal urine, but no trace could be found in the fetal urine.

When iodoform was for a considerable time employed by topical application to vaginal and vulvar wounds in women in childbed, iodine was, as a rule, found in the milk and maternal urine, but not constantly in the urine of the fetus.

The transmission of mercury to a nursing child through the milk is slight and may be irregular.

The influence of the nourishment of the mother, that is the food ingested, appears to be *nil*. Nurses may

with impunity be permitted to partake of acids (lemon, vinegar, etc.).

Of narcotics, the ingestion of the tincture of opium, in doses of from twenty to twenty-five drops, has in some instances been followed by prolonged sleep on the part of the infant, while in others neither prolonged sleep nor constipation was observed. After the administration of morphine hydrochlorate, in doses of one-eighth, one-sixth, one-fourth, and one-third of a grain, nothing in particular was noted in the child. Chloral, in doses of from fifteen to forty-five grains, brought about sleep of moderate duration in the case of the mother, without any action upon a strong and vigorous infant. When atropine sulphate was administered in medicinal doses subcutaneously to the mother, dilatation of the pupil was observed in the infant, disappearing in twenty-four hours.

In a large majority of cases, the milk of a woman with fever has no influence upon her infant. Except in rare instances of grave illness in the mother, with a persistent temperature of 40° C. (104° F.), the infant does not present the symptoms of the mother. In a case of mammitis, the passage of micrococci from the breast of the mother to the digestive apparatus of the infant has been observed.

PHENOCOL HYDROCHLORATE; A NEW ANTIPYRETIC AND ANTI-RHEUMATIC.

PHENOCOL hydrochlorate, the hydrochlorate of amido-acet-para-phenetidin, is a white, finely crystalline powder, soluble in about sixteen parts of water at a temperature of 62° F., the solution having a neutral reaction. When crystallized out of hot water the crystals resemble the cubes of antipyrine; when crystallized out of alcohol, in which it is readily soluble only when hot, the crystals are needle-shaped. Pure phenocol is separated from a solution of the salt by ammonia, potassic hydrate and potassic carbonate. It appears as white felt-like crystals, with one water of crystallization discharged. The melting point of the water-holding base is about 203°, when deprived of its water, 212° F. The hydrochlorate is preferable for use on account of its solubility.

According to Professor Kobert, of Dorpat, phenocol is non-poisonous even to the blood. Professor von Mering gave 22 grains to a rabbit without producing any symptoms. His observations upon patients with typhoid fever and pneumonia have shown that phenocol hydrochlorate is a suitable antipyretic, which in doses of 15 grains lowers the temperature about two degrees, and has not been observed to give rise either to collapse or to cyanosis. Sweating was not more decided than after large doses of antipyrine. Fifteen grains of phenocol are said to lower temperature as effectively as 20 or 30 grains of antipyrine, or 10 or 15 grains of phenacetin. The hydrochlorate is also said to possess power as a nervine and as an analgesic in neuralgias.

Hertel has employed the hydrochlorate as an antipyretic and anti-rheumatic. He gave it in solution in water in doses of from 7½ to 15 grains. In four cases of phthisis, in which the remedy was employed as an antipyretic, the temperature was sometimes lowered, but not very decidedly; more frequently it was unaffected. The remedy, however, caused no disturbance of the circulation, respiration, or digestion. When the temperature was lowered, the effect was transient; the subsequent rise was unaccompanied by chill or sweat. The urine presented a dark-brownish to blackish color, which deepened on exposure to the air. Indican and hydrobilirubin were always present. The adding of a solution of ferric chloride caused the dark color to become still deeper, concentrated sulphuric acid again somewhat clearing up the color, which did not disappear, but by transmitted light displayed a peculiar greenish hue.

In three cases of acute articular rheumatism, phenocol hydrochlorate appeared to be of decided service in lessening the joint-pains, after antipyrine, sodium salicylate, phenacetin and antifebrin had failed; but it exerted no influence upon the temperature. In a severe case of gonorrheal rheumatism, it had no effect either upon the fever or upon the joint-trouble. No injurious action upon the kidneys was evident. The remedy appears to be speedily excreted—at least the reaction of the urine with ferric chloride no longer occurs twelve hours after the administration of the phenocol hydrochlorate has been withdrawn.—*Deutsche medicin. Wochenschrift*, No. 15, 1891.

THE TREATMENT OF RHACHITIS WITH PHOSPHORUS.

VOUTE (*Bull. Gén. de Thérap.*, No. 14, 1891) states that while it is true that the calcareous salts are indispensable during the period of bone-development, it is also true that rhachitic bones are deficient in lime-salts, and that the stools of a rhachitic child contain a much larger quantity of lime-salts than those of a healthy child; it would be unfair to conclude either that the nourishment contained a deficiency of the salts of lime, or that these were dissolved by the lactic acid formed by some derangement of digestion. The constant presence of pure lactic acid in the normal stools of healthy, nursing infants has been demonstrated. Besides, rhachitis is sometimes found in infants well nourished and raised hygienically. The inference is that in consequence of the existence of rhachitis the lime-salts are not assimilated in sufficient quantity. This is in accord with the view that the activity of the plasma occasioned by the great formation of bloodvessels retards the deposit and favors the solution of the lime-salts.

It is held that the characteristic of rhachitis is found in an abnormal hyperemia and formation of bloodvessels in the bone-forming tissues, and that the symptoms are but mediate or immediate sequelæ. Among the causes that lead to such a condition are abnormal processes in the stomach, which are apt either to give rise to the excitants that provoke inflammation, or to irritate the bone-forming tissues, as a result of which there is an increased proliferation of these tissues, followed by the development of bone deficient in lime-salts.

It has been demonstrated that small doses of phosphorus exercise a beneficial influence upon the structure of new bones. This suggested the employment of phosphorus in the treatment of rhachitis. The results have been extremely gratifying.

Adopting the suggestion of Hénoch that the dimensions of the large fontanelle afford the simplest method of determining the existence of rhachitis, Voute examined

the fontanelles of all infants brought to his polyclinic. For this purpose he used graduated callipers. A great difference exists between the dimensions of the fontanelle in healthy infants of the same age, so that it is difficult to establish a mean. The measurements of the fontanelles were used as an index of the effects of treatment. Of 1146 cases, up to the age of twelve years, treated at his polyclinic for children, 132 were cases of rhachitis—a little more than 11½ per cent. In 40 of these 132 cases a sensible amelioration resulted from the employment of phosphorus. In 10 cases the results were uncertain or the duration of the treatment protracted. In 13 cases intestinal disorders were produced and the remedy had to be withdrawn. Forty-two children did not return after the first prescription, and cannot, therefore, be considered, while in 27 cases a different treatment was pursued. The formula employed contained $\frac{1}{300}$ grain of phosphorus in ℥ss of cod-liver oil, administered night and morning.

DIAGNOSIS OF MALARIA IN INFANTS.

Hochsinger maintains that intermittent fever is far more frequent in sucklings and young children than is generally supposed, particularly in Vienna. Children during the first two years of life are especially prone to it. The observations of Hochsinger confirm those of the French authors, who state that the disposition to malarial infection is incomparably greater in childhood than at any other period of life. Intermittent fever in children is rarely diagnosticated, because the disease runs an atypical course. The initial chill is always, the sweat nearly always, absent in sucklings and young children; intermissions between the febrile attacks are not clearly marked, the temperature remaining from one to two degrees higher than normal; the febrile curve is more like that of a remittent than an intermittent fever.

The digestive and respiratory systems of the child soon show the effects of the disease. The child runs down, loses flesh, becomes anemic, and of a sallow color. The symptoms may be ascribed to gastro-intestinal catarrh, or to dentition; or tuberculosis may be suspected. If quinine should be given, improvement and recovery take place with surprising rapidity. Mild forms of the disease may disappear spontaneously, or under the influence of a change of climate.

Prior to the discovery of the plasmodium of malaria Hochsinger frequently made the diagnosis by a study of the temperature-curve, the condition of the spleen, the color of the skin, the history of the case, the restlessness and the manifold nervous symptoms, coupled with the knowledge of residence in a neighborhood possibly malarial. In such cases, from seven to twelve grains of quinine were given, and nearly always effected a cure. Since systematic examinations have been made the plasmodium has been found in twenty-four cases of intermittent fever in children. Half of the cases were in sucklings, the youngest being three months old.

To examine the blood for plasmodia, cover-glass preparations are made, dried in the air, and subsequently fixed by immersion for twenty or thirty minutes in a mixture of equal parts of alcohol and ether. They are then stained with a solution consisting of about three ounces of a strong, aqueous solution of methyl-blue, to which a few drops of absolute alcohol and then seven and a half grains of eosin dissolved in water are added. The solution is then sterilized by boiling for half an hour in a flask, and preserved in a tightly-corked bottle. For use, a few drops are filtered into a watch-glass, and the prepared cover-glass, inverted, is permitted to float on it for at least ten or fifteen minutes, after the solution has been previously warmed. The cover-glass is then well washed in water, dried between filter-paper and then over a spirit lamp, and finally mounted in Canada balsam. The red blood-cells are stained rose, the nuclei of the leucocytes a deep dark-blue, and any plasmodia in the blood are stained a delicate sky-blue.

The segmented bodies that exhibit ameboid movements were never absent in sucklings. Though sought for in other than malarial diseases, the plasmodia were never found.—*Wiener medicin. Presse*, No. 17, 1891.

LOCAL AND GENERAL ANESTHESIA.

Grandclément (*Lyon Médical*, No. 12, 1891) states that local anesthesia usually suffices for the performance of minor operations, such as the relief of ingrowing nails, opening of abscesses, enucleation of small, superficial tumors, or to overcome the circumscribed pain of inflammation or of neuralgia. Several methods have been proposed for the purpose, but all are not equally valuable or secure.

1. *Anesthesia by congelation with the aid of a refrigerant mixture of salt and ice* was the only method used twenty-five or thirty years ago; to-day it is almost abandoned. It is painful and time-consuming, and is best applicable to the extremities, the toes or fingers, which can be plunged into the mixture. Besides, ice cannot always and everywhere be obtained.

2. *Spraying with ether* originated with Richardson twenty-five years ago. It is superior to freezing with ice; it requires a special apparatus and protracted application, and is sometimes quite painful.

3. *Spraying with ethyl chloride* has recently been recommended. Ten grams of ethyl chloride contained in a small glass bulb, terminating in a capillary tube that has been sealed in the flame of a lamp, are vaporized by the heat of the hand (ethyl chloride vaporizes at +10° C. (50° F.). A fine spray escapes when the tube is broken. In a short time the area sprayed presents a white appearance and a degree of anesthesia sufficient to open deep abscesses and to perform other minor operations.

4. *Hypodermatic injections of cocaine* induce phenomena of profound intoxication in certain individuals, even when small doses are employed. Unpleasant symptoms sometimes follow the instillation of cocaine into the conjunctival sac. In the violent periorbital neuralgias that are provoked by certain affections of the eye, Grandclément has obtained good results from injections of cocaine and antipyrine in association. He believes that the edema and vascular stasis resulting from the injection prevent too rapid absorption of the cocaine. The same end is attained by applying an Esmarch bandage to the part before the injection of cocaine is made. Grandclément has observed that the anesthesia produced by the mixture of cocaine and antipyrine persists for several days.

MEDICAL PROGRESS.

Circular Enterorrhaphy.—Paul (*Liverpool Med.-Chir. Journ.*, July, 1891), in cases in which end-to-end apposition is indicated, employs a decalcified bone-tube from an inch to an inch and a half long, from one-half to three-fourths of an inch in diameter, and from one-sixteenth to one-eighth of an inch thick, the lower end of which is perforated for suturing the proximal end of the bowel to it. A double thread, carrying a needle, is fastened to the tube to facilitate invagination. The tube is entirely introduced into the proximal portion of the bowel, the free margin of which is sutured to the tube through the perforations by means of fine chromicized catgut. Care should be taken to include in the suture the severed edges of the mesentery. Next, the needle armed with the double thread is introduced on a director into the distal segment of bowel, and, at a distance of three inches, made to emerge through the wall of the intestine. Then the distal end is sutured all around to the proximal end through the muscular and serous coats by means of chromicized catgut, special attention being again given to the mesentery. An assistant now makes traction on the double thread and resists the operator as he draws the distal end of the bowel back over the tube, thus invaginating the proximal end. The parts are retained in position by a few Lembert sutures, one on either side of the mesentery, and others as needed. The double thread is finally drawn tight and cut off short.

Pathological Anatomy of Rheumatic Facial Palsy.—Minkowski (*Berliner klin. Wochenschr.*, July 6, 1891) reported the case of a laborer, twenty-seven years old, with paralysis of the muscles supplied by the terminal filaments of the left facial nerve, following exposure to a draught. Fluids dribbled from the corner of the mouth; there were pain in the ear and derangement of hearing; the tip of the tongue deviated slightly to the right side; there was paresis of the left half of the soft palate; the uvula deviated to the right; there was moderate tenderness in the right parotid region, but no other derangement of sensation. The sense of taste was impaired in the anterior portion of the left half of the tongue, with a sense of dryness in the left half of the mouth; there was epiphora on the left; acuteness of hearing was heightened on the left. Degenerative reactions in nerve and muscle had begun. A diagnosis of rheumatic palsy of the facial nerve was made. Under treatment some improvement took place. The patient, however, committed suicide by taking hydrochloric acid. The autopsy revealed advanced neuritic degeneration in the peripheral distribution of the nerve, from the geniculate ganglion downward, no evidences of an inflammatory process in the bony canal for the nerve or in the neurilemma being discovered.

Rheumatoid Arthritis.—Sir Dyce Duckworth (*Liverpool Med.-Chir. Journ.*, July, 1891) accepts a neuro-humoral pathology for most features of gout and gouty ailments, and by analogy for rheumatism. In both he finds a dominant nervous element. In rheumatoid arthritis, however, proof of any humoral element is wanting. The relation of this disorder to rheumatism and to gout is inconstant. Sir Dyce Duckworth maintains, with others, that the articular lesions are peripheral manifestations of a degenerative change in a hypothetical center for the joints, situated in the medulla. The view of the nervous origin of rheumatoid arthritis is borne out by the results of therapeutics—iron, cod-liver oil, arsenic and nutrients constituting the best means of treatment.

Interstitial Injections of Corrosive Sublimate in Carcinoma of the Breast.—Chéron (*Revue Médico-Chirurg. des Mal. des Femmes*, July, 1891) has reported three cases of advanced carcinoma of the breast, with involvement of the axillary glands, in which excellent results attended interstitial injections of corrosive sublimate. Fifteen minims of a 1 : 1000 solution were injected two or three times a day, with vigorous antiseptic precautions. The injections occasioned little pain; in no case did suppuration occur.

The Mortality Among Breast-fed Infants. — Sabatier (*Lyon Médical*, 1891, No. 24) has observed that the mortality of infants nursed by women who for one reason or another use but one breast for nursing is considerably higher than in infants nursed from both breasts. In thirty-two of the former, seen in public service, the infantile mortality was 48 per cent.; in the same number of the latter, under similar conditions, the mortality was but 28 per cent.

To Detect Tubercle Bacilli in Sputum.—Kroenig (*Berliner klin. Wochenschrift*, July 20, 1891) has recommended a modification of the method of Biedert, as a result of which the otherwise necessary delay of a day or two is obviated. The sputum, liquefied by the addition of a dilute solution of soda and boiling, is evaporated in a centrifugal apparatus. In the sediment that remains bacilli are more readily found than if the original bulk of the sputum were examined.

Miners' Nystagmus.—In a second communication upon the subject, Snell (*British Medical Journal*, July 11, 1891) presents some evidence demonstrating that the nystagmus seen in miners is not at all dependent upon the use of safety lamps, but that the derangement is only observed in those whose special work necessitates their assuming constrained positions, upon which it is shown the ocular oscillation is dependent.

Non-pathological Albuminuria.—Winternitz (*Zeitschr. f. physiolog. Chemie*, Bd. xv.) treated by evaporation and precipitation the urine obtained from a number of apparently healthy individuals, in which albumin could not be detected by the ordinary tests, and was unable to find albumin. As a result, he concludes that normal urine does not contain albumin.—(*Centralb. f. med. Wissensch.*, July 11, 1891).

Purulent Inflammation of the Thyroid Gland following Pneumonia.—Marchant (*Wiener med. Presse*, July 12, 1891), at the French Congress of Surgery, reported the case of a woman seventy-two years old, in which, three weeks after an attack of pneumonia, a purulent inflammation of the left lobe of the thyroid gland appeared. In the pus evacuated by incision, pneumonia cocci were exclusively found.

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SATURDAY, OCTOBER 24, 1891.

HUMAN LIFE UNDER DENIED SENSATION.

The writer once experienced an odd series of feelings that brought vividly to mind the fact that life and emotion and happiness are compatible with great differences in and deprivations of ordinary mental stimuli. A social gathering was going on in a large hall, and the sounds of excellent music, dancing, laughter, and gayety, came from this room where a hundred or more happy folk were passing happy hours. Upon opening the door and being ushered into the hall the room was found to be as dark as midnight. Not a thing could be seen. It was the social hour of the inmates of an institution for the blind! The first uncanny, creepy feeling was soon dissipated by the thought of congratulation that indomitable mind and spontaneous emotion, though deprived of light and vision, could still find satisfaction and play through the medium of indirect sensation. Soul still conquered sense!

The same thought is exemplified and emphasized by a consideration of the report of the Convention of Deaf-Mutes lately held in Allentown, Pa. One is apt thoughtlessly to pass over the beginning of the report, that says, "The meeting was called to order by the president, who rapped vigorously on the desk to attract the attention of his audience." An audience of deaf-mutes called to order by a noise! Those who see a blind man tapping the street in front of him as he walks are apt to think that this is solely to avoid objects that the cane may strike. It is also to avoid objects that the cane does not strike—because to the blind man's ears and hand there is a *timbre* from blows upon the pavement near its edge, near posts or steps, that is very different from the resonance when the blow is not near such objects. It is said that blinded bats are able to fly unharmed, avoiding objects in their flight by means of the perception of an increase of barometric pressure of the air close to those objects—so sensitive to variations of pressure is the expanded interdigital membrane. (The experimental blinding of the bat, however, was not necessary, because millions of bats winter in Mammoth Cave, miles from the faintest ray of light.)

A suggestion is indirectly aroused by this fact as to the "relaying," if one may so speak, of crude and faint stimulation by the mechanism of the nerve-ganglia and centers. There is a nervous device that reïnforces and transforms whilst also repeating the subtle, weak, and in themselves meaningless, hints of the external world that we call sense-impression. It is the living prototype of the electrician's "relay" and microphone combined. Thus all man's mechanic devices are but poor imitations and repetitions of what Life's vital forces have long ago brought to wondrous perfection!

In the deaf-mutes' convention prayer was said, the roll called, addresses made, business conducted, and long sessions held—all in the sign-language—all in silence! "The amended constitution and by-laws were adopted *after a lively debate.*" If present, our blind friends would certainly have thought the meeting very strange and stupid. But the success in raising funds for a proposed home for aged and infirm mutes, and the discussion of other worthy objects, made the gathering a very interesting one for the attending delegates.

According to the Paris correspondent of the London *Times* the method of analyzing motion by the chronophotograph, which has been so happily applied by M. Marey in the case of moving animals, such as horses running or birds and insects in flight, has recently been employed by M. G. Demeny, a preparator at the physiological station of M. Marey, to examine the movements of the lips in speaking. He has obtained results which show that the form of the mouth is quite different for the different articu-

late sounds. With these photographs combined in a zoetrope he has reproduced the movements of the lips by synthesis. An ordinary person finds it difficult to read the words by the animated pictures; but a deaf-mute who has been accustomed to read from the lips of a speaker, found it easy to do so from the photographs. A young pupil of the National Institute of Deaf-Mutes in France could read the vowels and diphthongs as well as the labials. The first experiments were, of course, not all that could be desired; but, in bringing the matter before the French Academy of Sciences, M. DEMENY expressed the hope that in continuing his researches he would be able to develop a new method of educating deaf-mutes by sight from more perfect photographic images. Obviously a magic-lantern lecture might be delivered to an audience of deaf-mutes in this way.

The encouraging and deeply suggestive fact of rescuing the faculty and power of speech in these deaf-mutes is one that must command the sympathy of all. There is no limit to the ingenuity of Life and to her triumphs over adverse circumstances and deprived stimuli. We have all read of another striking example—very different in kind, of course, but illustrating the same great truth. One of England's greatest statesmen was blind; so was a great numismatologist; and another of her great men, a hunter and rider of unexampled daring, a peerless sportsman, an excellent business man, and active administrator, had neither arms, hands, legs, nor feet. One is reminded of EMERSON'S cool answer to the Millerite who excitedly told him that the world was to come to an end that day: "Oh, well!" said the philosopher, "we can get on very well without it."

It would seem that if loss of sight were added to loss of hearing and speech, naught but tragedy and melancholy could be left, or that the routine life of the lowest functions of nutrition, etc., would persist. But there are few happier and brighter-minded people than LAURA BRIDGMAN was and than HELEN KELLER is. Another, a man likewise deprived of these great avenues of influence from and communication with the external world, without which life to us would seen so barren, travelled all over the United States alone, raised a family, and lived out his period of brave and satisfied life. He could talk with anybody by means of the ingenious device of tattooing the English alphabet upon different parts of his hand. Words and sentences were spelled out and recognized by the positions of the letters touched. The emotional life of these imprisoned souls, cut off from so many relations and avenues of interchange with the external world, must be all the more vivid and hypersensitive. A coarse jar of the hyperesthetic receiving end-organ of sense is transformed into a rude thunder by the highly attuned and delicately responsive microphone of the inner sensation-making mechanism. Thus the possibility of causing sharp sorrow is a necessary concomitant of the ease of eliciting joy. It is the glory of civilization to care for such and shield them from pain, and it is the delight of medicine to minister to them its healing. It is hard to sympathetically understand and realize the inner life of these almost windowless minds. How strange must seem to them the dreams and somnambulisms of never-to-be awakened emotions, the dumb reaching out toward reality of denied possibilities, the unsatisfied hungerings of imprisoned sensibilities. Their minds must be thrilled by dim hereditary echoes and the far-away caresses of ghostly ancestral hands. With what pathetic half-responsiveness do these shut-in souls catch the shimmer of long-departed life, that comes to them like the last faint evening flushings reflected from distant mountain-tops to valley-dwellers that are in the night.

A RATIONAL MEDICAL NOMENCLATURE.

THERE are too many proper names in medical nomenclature. The sooner a change is made, the better. In the selection of a name for an object, a condition, or a disease, descriptiveness should be aimed at. It may, however, be interposed that knowledge is at first crude and that names descriptive at one period of history may convey no adequate idea at a later period. While it must be admitted that this objection is supported by an element of truth, still in the selection of a name it were more logical to choose one that carries with it an idea than to designate a condition after its discoverer. If this conception were adhered to there would be fewer contests for priority of description.

No department of science is more ready than medicine to bestow appropriate credit upon its deserving members, but there are other ways of doing this than by obstructing the progress of knowledge by imposing upon laboring memory the additional burden of a mass of meaningless names. To see that honor and distinction are awarded to

those to whom it is properly due should be the duty of historical medicine.

As knowledge grows broader and more profound, the compound becomes resolved into its component elements. What at first appears simple is discovered to be complex. It is at this stage that we have arrived as regards so-called Bright's disease. While we do not know all there is to learn concerning the various morbid conditions of the kidney, it has long since been demonstrated that what was originally described as Bright's disease is not a single condition, but that Bright's disease represents a variety of different pathological lesions. It is on this line of thought that Delafield (*American Journal of the Medical Sciences*, October, 1891) at the recent Congress of American Physicians and Surgeons proposed to discard the designation Bright's disease as no longer serving a useful purpose. He divides the diseases of the kidney into congestion, inflammation, and degeneration. Each of these may be acute or chronic. Acute nephritis may be exudative, or productive, or diffuse; chronic nephritis may be productive or diffuse, with or without exudation, suppurative or tuberculous. The degenerations are all secondary. These designations are sufficiently expressive; they meet all the indications for the present; they are elastic and will permit of extension as occasion may warrant.

The medical profession will always hold in deepest reverence the memories of such men as Richard Bright, but let us make the nomenclature of medicine rational.

LOVERS OF HYPOCRISY.

There is one aspect of the tempest in a teapot that seems to have been aroused among the Hahnemannian knights by the criticisms of The News—one important aspect, that is deserving of passing notice. In planning the "boycott" those with any approximate sincerity of conviction should ask themselves if in the long run a hypocritical enemy is not more to be feared than a frank enemy. Is open-field or ambush fighting the most indicative of civilized warfare and honorable character? Do they imagine for one foolish instant that those "allopathic" journals and editors and publishers that are silent, evasive, compromising, or even flattering to them, have any opinion of their peculiar medical creed and practice essentially different from that frankly outspoken by The News? Do they imagine for one foolish instant that the silence, the evasion, the offers of compromise and flattery, represent anything but "policy" cloaking concealed contempt? An honest man prefers an honest enemy, but the subconsciousness of error makes one beg for dishonest friends. And the dishonest friend is always on the lookout for dupes.

SOCIETY PROCEEDINGS.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

(Continued from page 471)

First Day—September 24th. Evening Session.

Dr. Horatio R. Bigelow, of Philadelphia, read a paper entitled "Eight Months' Work at the Free Dispensary for Women," in which he said that for purposes of observation and study, individual clinics were a necessity, to afford a wider range of observation and a larger opportunity of weighing evidence than can be obtained by a fluctuating private practice. Refinement, scrupulous care, and precision, are requisite in formulating a diagnosis.

At the dispensary, 75 new cases had been treated, between 600 and 700 applications having been made. Fifty-eight punctures were made in 15 cases of uterine fibroids. Three tumors were subperitoneal, the others mural. The mean current-strength used for vaginal applications was 35 m.; for punctures, 85 m. In simple cases of salpingitis and salpingo-ovaritis, symptoms are relieved by vaginal applications, but cures are never accomplished. In simple, uncomplicated cases, in which the tubes are not constricted, and when the dribbling into the uterus has not been interfered with, intra-uterine applications, supplementing the vaginal, do have a marked influence for good. The cases of large tortuous tubes, with thin and distended walls, irregular swellings, denoting pus-pockets and pronounced cachexia, demand surgical interference. Electricity can do no possible good—it may do much harm. Hence one object of a well-conducted clinic is differentiation—to know what cases to treat, to realize that there is such a thing as over-treatment, and that electricity is not a panacea for all female pelvic disorders. Some other things are learned. Many tumors appear benefited symptomatically only. Soft myomata, fibromata undergoing degeneration, and subperitoneal tumors, are not, as a rule, benefited anatomically. In one case, a large subperitoneal fibroid has been punctured a dozen times through the vagina, without apparent diminution of the growth, and without decided change of symptoms. Locomotion is difficult and painful. This was an unfortunate test-case, because subperitoneal growths, being far out of reach, resist the action of the current, and because the patient's surroundings are most lamentable. She is a type of poverty. She lives in filth, is insufficiently nourished, and drinks to excess. Confidence in any therapeutic measure should not weaken one's honesty in the recapitulation of results. In this case electrolytic punctures have been tried with three needles through the abdominal parietes, without

apparent diminution of the growth of the tumor. It has changed its form from a prominent dome-like swelling to a broad, lobulated lateral mass, somewhat lower down in the pelvis. While abdominal puncture might, theoretically, be proper, the results of operation are against its use. When the abdominal walls are thin and transparent, when the intestines do not overlie the tumors, and the bladder is at a safe distance, abdominal puncture may be considered.

All the cases of fibroid treated were made comfortable. No tumors have disappeared; two are reduced in size. Under better hygienic conditions and regular treatment better results can be obtained than is possible in a clinic. Many cases come irregularly for treatment, and are not under constant observation, and all are badly nourished and improperly cared for. Small intra-mural tumors, hard, and not very painful, that are taken in hand as soon as noticed, always do well under the buried negative puncture, and are made to disappear. Inflammation of the adnexæ, old chronic salpingo-ovaritis, demand the greatest possible care and dexterity in their management.

Of the first importance is accurate diagnosis. It is a *sine qua non* of success that the electro-therapeutist be a thoroughly competent gynecologist, if he intend limiting his practice to the diseases of women. This end can only be attained after years of work with ample material, and it would be well for the science and art of medicine if a more enlightened view of pathology should be conjoined to it. The clinician should know all about the processes that give rise to abnormal conditions, that he may have a clear conception of the limits and degree of acute inflammations, and of the nature and extent of degenerations. Otherwise he gropes in the dark, and his labors will be in vain. Pathology is far too commonly neglected. In acute disease of the adnexæ, the introduction of a sound unless in competent hands is apt to create mischief. Not only is the lining membrane of the tubes in a hyperemic and hyperesthetic condition, but the whole endometrium also, and it is bad practice to resort to any measure that will intensify such pathological processes. The same conditions exist in some chronic states. Cases in which active inflammation of the peritoneum has been reported after application of the intra-uterine current have probably been so caused. In such cases treatment may be begun with vaginal applications of great delicacy, until the patient's uterus becomes tolerant of a foreign body; in all cases of extremely tortuous or constricted tubes, interference should be refrained from. Dr. Bigelow expressed firm faith in the value of electricity in gynecology, but he realized that incompetence, immoderate enthusiasm, and faulty differentiation are to be avoided. Electricity is employed in the treatment of the diseases of women by those who have not the requisite experience or the modesty for its successful employment. Faulty complications do not happen to competent electro-gynecologists.

Any inflammatory process in the pelvis will be followed by some effused lymph, which may form adhesions. Most tumors are complicated by adhesions. An objection to electro-therapeutics based on this ground would not hold. The work of abdominal surgeons must not be judged from imperfect and inadequate data. Many tubes and ovaries are removed without sufficient cause, but these instances are not often from the record-book of competent abdominal surgeons, but are usually the belongings of a young ambition, anxious to climb. Surgery is handicapped with incompetent practitioners just as electro-therapeutics is, and it is not one bit more logical to lay all miserable failures and mistakes at the door of honest surgery, than it would be for surgeons to conjure all sorts and conditions of doubts, and to hold the responsible intelligences among electro-therapeutists responsible for engendering them. It must be remembered that eminent surgeons see a class of cases in large numbers that rarely, if ever, come to smaller clinics—cases in which nothing but operative interference could be of the least service. So it is not to be wondered that surgeons arise in their wrath when lesser lights, who know little or nothing of such aggravated forms of disease, dispute the necessity of operating. In some cases neither electricity nor expectancy can accomplish aught; in others, the employment of electricity would be most pernicious; and there are now and always will be cases that will not be benefited by electricity. One of the greatest dangers is the over-claiming of young and restless men, and the unequivocal condemnation of honest intelligent surgery by those that know little of either abdominal surgery or electro-therapeutics. Personalities are offensive, and are not arguments. Honest surgeons do not rail at intelligent electro-therapeutists, but they do object to inexperienced gynecologists and unlettered electro-therapeutists claiming marvels for a method of which they can know little or nothing—and they have a right to object to the criticism of men that know nothing of pathology. The tone of recent discussions in special societies is to be deprecated. Surgeons must not impugn the motives of earnest electro-therapeutists. A study of electricity is fraught with difficulty, and is not to be had for the asking; there are very few operating surgeons who know anything about it. Therefore they are not competent witnesses.

Dr. Walling, of Philadelphia, having seen many of the cases alluded to, stated that nearly all of the cases of fibroma were in persons who had been poorly nourished. If such cases were properly nourished, if they could be placed in a hospital on a nourishing diet, they would be in much better condition for treatment, with prospects of partial or complete recovery. The trouble seems to be a lack of nutrition. If Nature does not have the proper supply of nutritive elements, she must build of what she does get, so that a lower grade of nutrition results.

Dr. Hayd stated that he had no doubt but there is some harm done by the use of electricity, but not more than there is by the use of other powerful remedies, such as strychnine, morphine, and similar drugs.

The young man just from college, with no special training in gynecology, should be cautioned that he has a powerful agent when he uses electricity, and that he may do a great deal of harm if the agent is not properly employed and a great deal of good if it is properly employed; he should be enjoined to make as few intra-uterine applications as possible. Years ago, when the sound was introduced without proper consideration, its influence was almost as baneful as is that of electricity to-day in the hands of unscientific men.

If there is an acute or a subacute condition, and the

electrode is not introduced with the greatest care and the greatest cleanliness has not been exercised, an inflammation may be lighted up, with all its attendant dangers.

In reply to an inquiry, Dr. Bigelow stated that he had treated two cases of malignant disease of the uterine adnexa. In one electricity did no good, but rather aggravated the condition; in the other, in which the malignant disease was confined to the cervix, the results were brilliant. If the recent knowledge of the pathology of carcinoma is correct—that is, that it is simply a normal cell exaggerated in growth and not a distinct cell, but simply a normal growth with a normal composition, displacing the normal cells, with subsequent degeneration—then the galvanic current should be of great use. Malignant growths of the adnexæ are not benefited in the least by galvanism, but are rather aggravated.

Dr. Massey referred to a case in which a large sarcoma of the adnexa was greatly helped by electricity, being much retarded in growth, although not cured.

Dr. Robert Newman, of New York, read a paper on "Electricity in Carcinoma," in which he presented the various modes in which electricity has been used in the treatment of carcinoma, and showed that undoubted cures had been reported. Four different methods have been used: First, Galvanism; second, Electrolysis; third, Galvano-cautery; fourth, a combination of two of the preceding.

Galvanism has been applied externally with pads or sponge electrodes and (the interrupted current) with needles. The external application by the galvanic (constant) current with two sponge electrodes to the skin on or near the tumor has not met with success; it seems only to have stimulated the carcinomatous cells to greater proliferation, and thereby hastened the fatal termination.

In the treatment of carcinoma by electricity *electrolysis* has been mostly used, and is best known. It differs widely from the first method of galvanism, which is expected to destroy the carcinoma by a strong mechanical action. Electrolysis, on the other hand, either destroys, causing decomposition by its chemical action, or causes absorption, according to the strength of the current employed. The art of applying electrolysis successfully consists in using the correct strength of electric current, applying the respective poles in the right place, selecting the size, shape, and material of the electrode, and regulating the duration and intervals of séances. A mild current can effect absorption only—a strength of from 5 to 30 milliampères, and even more, may be used, according to the requirements of the case. A strong current of from 25 to even 200 milliampères (and some operators have used even more) will destroy tissues to such a degree that the tumor may slough off as a dead mass. A good rule is to apply the current not stronger than necessary to accomplish the desired object.

It is not yet decided whether or not there is an interpolar electrolysis. It is only certain that the decomposition by electrolysis is greatest at and around the terminus of the poles. From experiments made by Dr. Newman it seems that the electrolytic action extends around the needle in a radius of from one and a quarter to one and a half inches. Concluding that electrolysis is capable of destroying carcinomatous cells, and that it causes specific decomposition at the pole and within a radius of one and a half inches, if needles are inserted in a tumor at a distance of two and a half inches it may be expected that the electrolytic action will affect the interval between the needles and destroy the integrity of the carcinomatous cells. Dr. Newman has, therefore, operated principally by two methods. If absorption by electrolysis was intended, the whole tumor was electrolyzed in sections with needles connected with the negative pole—one, two, or more needles being introduced into the tumor at a time—while the positive pole was applied as a large pad outside on the cuticle or near the tumor. Weak currents are employed. An anesthetic is not required. In the second method both poles are represented by needles. The positive pole (a single needle) is placed in the center of the tumor, the negative needle or needles at the circumference of the tumor or even beyond, but near the margin of the tumor. Destruction and sloughing of the diseased mass takes place.

Dr. Newman began the electrolytic treatment of carcinoma in 1874, and has since had considerable experience. The results varied: some were failures; in some cases the patient's life was prolonged; there were also cures, some patients remaining well without any sign of recurrence of the growth for many years.

The treatment of carcinoma with the *galvano-cautery* has been practised by many, but it seems that Dr. J. Byrne, of Brooklyn, has had the greatest experience and success. Of 367 cases so treated, there was no return of the disease in from two to eight years in 153 cases.

Finally, electricity may be employed in the treatment of carcinoma by a combination of any two of the methods already considered. Most commonly the applications of the electrolytic and of the galvano-caustic effect of the battery are combined in the same case.

How is electricity expected to cure carcinoma? 1. Strong currents of galvanism are expected to destroy the carcinomatous cells by a mechanical action. 2. A removal of carcinomatous tumors by extirpation (amputation) is effected by the galvano-cautery. 3. Electrolysis with a mild current facilitates absorption by inducing chemical decomposition. 4. Electrolysis with strong currents acts by its destructive influence. Whichever method is used, it must be applied thoroughly and systematically, removing all the carcinomatous cells. Success can only be expected in the earlier stages of the disease, when the malady is local and the malignant mass is concentrated in one small tumor. If the carcinomatous cells are distributed in different parts of the body, and the disease has advanced far, success cannot be expected.

The treatment of carcinoma by means of electricity possesses advantages over other methods. 1. The facility with which electricity is applied; some methods can be carried out without an assistant and without an anesthetic. 2. The operations are free from danger. 3. There is no shock after the operation. 4. It is easier to get at the entire disease in an early stage than by any other means. 5. It can be used in places anatomically dangerous and beyond the reach of the knife, and the horror of the knife is avoided. 6. It retards the growth, prolongs life, and benefits the

patient, even if it does not always cure. 7. The patient is not necessarily confined to bed or house. 8. The operation does not cause pyemia or septicemia. 9. There is no danger of hemorrhage, but hemorrhage is controlled. 10. There is more chance of a cure and better healing after the operation. 11. It always allays pain.

Dr. Hutchinson related that he had operated on sixteen cases, of which two are still living. One was a case of epithelioma of the lower lip removed fourteen years ago. There has been no return and the patient is in good health. The other was in a woman from whom a breast and the two labia majora were removed; after twelve years she is in good health.

Dr. Hutchinson was firm in the belief that carcinoma is curable by galvanism.

Dr. Massey stated that he had used a method different from any mentioned. It consisted in the application of the carbon positive pole of a strong current directly to a limited surface of the diseased tissue. In that way, the parts being free from excessive sensation, the ready destruction of the carcinomatous tissue is accomplished, with immediate cessation of the bleeding that annoys the patient. Dr. Massey had in one application, with less than one hundred milliampères, arrested a hemorrhage that had lasted a year, and the hemorrhages have not recurred. The carcinomatous tissue subsequently comes away under the influence of antiseptic douches in white crumbs, and leaves a clear, hard excavation.

Dr. William F. Hutchinson, of Providence, read a paper entitled, "What a General Practitioner Can Do with Electricity," in which he cautioned against prettily finished boxes, the contents of which are sealed, upon which repairs can only be made by the maker. He advised that no form of galvanic cell be bought unless every part may be easily inspected, readily understood, and quickly reparable without expert aid. He believed that some form of Grenet cell is the best that a general practioner can find for portable use. For office work, where great life with small trouble is required, he has not found anything to equal the new Edison cell, catalogued as "Type C." It will give exactly the same voltage—about seven-tenths volt per cell—during its entire life, about a year of ordinary service.

For faradic machines, he recommended a Du Bois-Reymond coil with two Grenet cells in the box. One of these will be sufficient for ordinary use, but in asphyxia from gas-inhalation, in drowning cases, and especially in opium-narcosis, when it may be necessary to prolong the treatment for hours, a second cell is called for. Perhaps the best faradic machines in America are made by Fleming, of Philadelphia.

Among the diseases that Dr. Hutchinson thinks may be successfully treated by the general practitioner are functional derangements of special sense, and such forms of their paralysis as are dependent upon excentric causes; certain forms of dyspepsia dependent upon atony of the stomach-nerves: sexual neurasthenia and impotence springing thereform; peripheral neuralgias and such other neuralgias as are confined to long nerve-trunks; herpes zoster; muscular rheumatism; neuralgic dysmenorrhea, and parametritis.

Dr. M. J. Grier, of Philadelphia, read a paper on "The Treatment of Some Forms of Sexual Debility by Electricity," in which he said that of the incidental inquiries presented to the physician, many of them will refer to the derangements of the sexual functions. The individuals usually seek relief from a neuralgia, pain in the back, muscular debility, or some other cause leading easily and naturally from the ostensible to the real object of the visit. This is generally the case with the younger subjects who have become conscious of an appreciable physical failure, or who, from the presence of some slight subjective symptoms, are apprehensive that such failure will certainly occur. Another class will seek relief from conditions fully developed and are at once freely communicative. Both classes have morbid ideas as well as erroneous opinions concerning their condition, which add difficulty to their management. Some of them have already been under treatment; the family physician has been consulted, and iron, strychnine, and electricity have been continuously administered, but without the desired result. The larger number of such cases present a state of local and general debility resulting from excessive and long-continued stimulation of special nerve-endings, with consequent exhaustion of the spinal and cerebral centers controlling the parts involved.

The neurasthenic condition of the patient will probably and justly demand the earliest attention. Whether it be the cause or the effect of the sexual debility, the progress and results of the local treatment will be much more decided as this state disappears. In one class, and a large one, there will be found to be a lowered functional activity of the entire nervous system, depending on preceding mental depression caused by the gradually developing consciousness of the diminution of the virile power and the fear of its complete abolition. In another class, of more mature years, there are varying degress of debility, ranging from actual impairment of function to complete loss of power.

In addition to the value of properly directed medication, aided materially by the change in the morale of the patient, as the physician succeeds in inspiring him with the hope of relief by demonstrating to him its possibility by the results of treatment, electricity is a potent factor in his restoration. Independently of the special character of the neurasthenia, beyond the recognition of the sexual disturbances, galvanism to the head and spine may be at once employed. Central galvanization, with its catalytic and alterative effects, will perhaps best meet the indications; the method may be varied to suit each particular case, but, as a rule, the effort will be to bring the central and spinal centers under its special influence by either increasing or diminishing their irritability. In the application to the head, the vertex is well moistened and a two-inch electrode firmly applied. The vertex is selected because the current is well borne at that point, there is less vertigo or other apparent cerebral disturbance. To diminish cerebral irritability the positive pole should be applied, as its effect appears to be the more sedative. The negative electrode is a slightly convex button, two inches in diameter.

Pure tin plates of about No. 28 gauge are preferable for electrodes, as they are soft and are easily moulded to any curved surface and are always bright and fresh-looking; these are covered with ordinary muslin, such as cotton shirting. Perhaps equally important is the greater uniformity in the relation of the electrode to the

skin, as to distance; it never varies $\frac{1}{100}$ of an inch, keeping the current-intensity quite regular; while with the sponge the ever-varying distance and pressure may be quite enough to convert an intended stabile into a labile application. Having adjusted the positive plate to the vertex, the negative is placed subaurally on either side; beginning with a minimum amount of current, say about two milliampères, and a uniform pressure, the negative electrode is slowly moved down over the region of the cervical sympathetic nerves until the first dorsal vertebra is reached, when the current-strength may be gradually raised to five milliampères; the electrode is then passed slowly down on each side of the upper spine. This current-strength should be maintained, as the increased resistance of more tissue is brought into the circuit. As a rule, the electrode need not pass below the dorsal vertebræ, depending on the kathelectrotonic state induced below that point, and reserving the special lumbar and sacral centers for subsequent treatment. Carefully avoiding any abrupt change of application and pressure, the positive may now be placed over the inferior cervical ganglion on either side and the negative traced over the course of each dorsal nerve, thus gently influencing the sympathetic ganglia.

It is probable that in a labile application of the current, the movement of the kathode over the tissues is equivalent to an opening and closing of the circuit, as each cell is successively subjected to its influence, and thus there is induced a momentary contraction or tonic state of the vascular muscles, resulting in improvement of circulation and nutrition. Perhaps, also, the electrical actions upon trophic-nerve tissues may produce changes in other tissues and organs of the body, organic metamorphoses, modifications of nutrition, which constitute a part of the "catalytic effects."

After a number of applications the general result of the treatment is apparent in the disappearance of the sallowness and nervous depression, and in a better cutaneous circulation, as shown by the improvement in the complexion, and in more refreshing sleep; there is also an improvent in the digestive functions, and a general feeling of buoyancy. In this way is afforded a better foundation on which to institute treatment of the local disturbances.

The loss of the erectile power is the most prominent of the local symptoms and is that which naturally impresses the patient most forcibly, and more than any other impels him to seek professional aid; to him it is but a single fact; to his physician it is evidence of the derangement of a complicated system of parts and functions, both local and general.

Such cases are found associated with long-continued continence and in men of excessive mental application, in whom the cerebral activity has been expended in other directions; also in those who have become sexually morbid, having lost the normal physical reflexes through exhaustion. They usually retain the physical reflexes and respond to stimulation of the local sensory nerves, thus proving that the spinal paths of the afferent nerves have not been impaired, or at least not to a very great extent.

In such cases the indications are to stimulate the nervi erigentes and the upper centers acting in conjunction with them. An ascending galvanic current of about five milliampères may be passed from the perineum, from over the third and fourth sacral nerves, where the vaso-dilator branches arise, and from the genito-spinal center of Budge, at the fourth lumbar vertebra, successively; the negative electrode should be carefully applied to the back and sides of the neck and to the vertex, in an endeavor to increase the excitability of the cortex in those in whom it is depressed, and to quicken the responses of the lower spinal centers to their impress.

Under ordinary conditions the vasomotor nerves are in a state of moderate excitation. If, from irritation of the vasomotor centers, the vasomotors are over-excited, and a controlling influence is exercised over the vessels supplying the erectile tissues, through their dominant control over the vaso-dilators, the engorgement of the sinuses of the cavernous bodies will be prevented and erection will be impossible. Such a condition is present as a result of excessive sexual stimulation, and is most probably dependent upon the irritation that precedes exhaustion of the centers. The excessive tone is shown in the diminished blood-supply to and the lowered temperature of the pale and shrunken organ. In persistent overaction of these nerves, the lessened blood-supply to the secretory organs is shown by the diminished quantity of their secretions and the consequent loss of this source of stimulation. In such cases, galvanism applied to the vertex and upper spine, as in neurasthenia, will diminish the upper central irritability, and good results will follow stabile applications to the lumbar region with a current of five or six milliampères through a positive four by four inch place, one of equal size being placed at some indifferent point on the lower portion of the thigh. The best results are produced by placing a moistened electrode about one and one-fourth inches square against the perineum—this should be the positive pole; the negative may be a plate of three inches square, applied continuously to the sacro-lumbar junction; the cords should be connected with the terminals of the primary coil. The application is begun with the minimum strength, which is gradually increased as much as the patient can comfortably bear, and is maintained for from ten to fifteen minutes. In some cases, usually in those who are less nervous and irritable, the effects are noticed at the time of the application; others may not notice a change for half an hour or longer after the treatment. In those in whom the sensory nerves are not very much impaired, the first impression may be a sense of tingling along the dorsal nerve of the penis, or it may be distributed over the inner surfaces of the thighs, through branches of the internal cutaneous nerves, often reaching to the knees. In a little time a warm, glowing sensation will be felt, mostly in the sacro-lumbar and gluteal regions; this being obtained, the application should cease. This effect may last for from a few minutes to several hours, and will be alluded to by the patient at a subsequent visit as causing a feeling of comfort and pleasure. The ultimate result is a restoration of the normal circulation and an improvement in the nutrition of the parts, with increased local muscular power.

The opposite condition of vasomotor relaxation is frequently encountered—an exhaustion following the state of irritability just described. When affecting the

centers controlling the genital organs, the result will be a passive engorgement with a flaccid elongation; the temperature may be normal or lowered, depending on the sluggishness of circulation; the muscles are undernourished and voluntary control of them is lessened; in many cases the secretion of the coronal glands is unpleasantly augmented. In the erectile effort, the vasodilators may be sufficiently active to enlarge the cavernous sinuses and increase the flow of blood thereto; but the weakened muscles fail to sufficiently retard the return of blood from them, and the result is a moderate increase of bulk, with a soft glans and an easily compressible body. As the nerves cannot be influenced by direct contact, the application of galvanism to those parts which anatomy and experience teach us are the most available, and through which reflex effects can be obtained, must be depended upon. An efficient method consists in the introduction within the urethra of an uninsulated metallic sound connected with the negative pole; the current of galvanism should not be over two or three milliampères, and should be slowly broken, say about twice each second, for not over two minutes; the contact should last only during the instant of making, occasioning a short interval of excitation and a longer one of rest. The improvement from repeated applications will be shown by the retraction of the organ to a normal size. The immediate effect of the application is due both to muscular stimulation and increased arterial contraction, but mostly to the latter. Two other methods may be employed to produce this stimulation. In one, galvanism is applied to the surface of the inner side of the upper third of each thigh, with a bare negative electrode, kept slowly moving, and using a current-strength only sufficient to develop a pungent irritation of the sensory nerves; to use more would be to overtax and exhaust the vasomotor nerves still further. The bare negative electrode of the inductive coil may also be used over the same region and for the same purpose. The vibrations should be slow enough to give perceptibly distinct shocks. In therapeutic applications the positive pole may be placed at any indifferent part, since the effect desired is the reflex action produced by the irritation of the negative pole.

Dilatation and turgescence of the sinuses of the corpora having occurred, it can be readily seen how a partial or complete failure of these muscles to act will impair or prevent erection. In their sexual activity, these muscles, while partly under volitional control, are mainly excited by reflexes, and in health very readily become equally active under the reflexes resulting from stimulation of the sensory nerves of the penis and adjacent parts. These muscles respond to the faradic and galvanic currents, according to their degree of health or exhaustion, and tests thus made may assist in the diagnosis of their condition. A suitable electrode, insulated where it comes in contact with the anal margin, may be introduced in the rectum and pressed against the anterior wall; a small, flat electrode, connected with the negative pole of the extra current should be applied to the perineum, and the current gradually increased in strength until muscular action is produced, which in health is quite strong. If the muscles fail to respond, or respond but feebly, the galvanic current may be substituted, maintaining the same polarity, making slow interruptions, with a feeble current, gradually increasing both the strength of current and rapidity of interruption. This proceeding answers very well for the direct treatment of these muscles. Decided contractions of the accelerator and compressor urethræ muscles may be obtained by substituting for the perineal electrode an uninsulated metallic urethral sound and using an uninterrupted galvanic current.

These muscles being supplied by the muscular branches of the pudic nerve, they may be indirectly stimulated by placing a positive plate-electrode over the sacrum, the rectal electrode becoming the negative and remaining as before; using, if the muscles are very feeble, a short constant current of not over two milliampères, supplemented by twenty or thirty interruptions, occupying about one minute. A weak muscle of this class requires a longer duration of current-action and short intervals of rest, if the current be of not more than the strength stated; vigorous treatment only seems to exhaust the already enfeebled parts. The rectal electrode may now be changed for a small perineal plate, and stimulation of the perineum and root of the penis may be made with a bearable strength of the extra current, slowly interrupted. This will produce both muscular and reflex effects.

Conjoined with defective muscular action, there is usually a lowered sensibility of the genital cutaneous and special sensory nerves, caused by the exhaustion following excessive stimulation. This will be found most marked about the prepuce and the glans, more particularly around the corona and the papilla beneath the meatus; also, if the anesthesia be profound, in the frænum præputialis. The cremaster reflex is sometimes diminished and may be abolished. Such cases may have a decided cerebral sexual activity with physical failure; or there may be a moderate erectile power, with loss of sexual pleasure and a retarded or incomplete orgasm. Sensibility of the surface may appear quite decided under electric tests, and the tactile sensibility be much enfeebled or lost, lessening the value of electro-diagnosis, excepting as to the condition of the muscles. As the local nutrition is usually impaired, resulting in relaxation of tissue and lowered temperature, both indications are met by the use of the galvanic current applied to the sensory parts most affected, by means of a small bare electrode, placing a medium-sized positive plate over the sacrum to include the origin of the pudic nerve, from which is given off the dorsal nerve of the penis. In treating the lowered sensibility of such nerves, the best results are obtained from a very mild current in this manner, and continued only long enough to produce a blush and a slight pungent sensation at the negative pole.

In the earlier changes of nerve excitability, one often finds an extremely sensitive condition, a hyperesthesia, in which even contact of the ordinary clothing with the surfaces will suffice to produce erotic excitement; preputial and rectal irritation, as well as other local causes, may also originate it. In many cases such irritation leads to direct stimulation of the genitals by touch, which, continued to excess, is a potent factor in producing abnormal excitability and consequent exhaustion of these nerve-centers. It is also a frequent cause of premature emission. Having removed or corrected the exciting

local causes, galvanism will aid in removing the central irritability. For its sedative action the anode is applied over the sacrum, a stabile current of not over five milliampères being used; the negative pole should be placed over some indifferent point, preferably to the lower limbs. It is essential to have a very mild current, free from any variation of strength, and to maintain the sacral pole evenly at one position and for a longer time than has been advised in other applications. Having thus treated the centers, the excitability of the nerve-terminals may be diminished by enveloping the penis in a soft metallic plate, thinly lined with moist absorbent cotton, to fill up irregularities and to make more uniform contact. This plate should be the anode; the kathode may rest on the abdomen. A mild, steady current through a sensory nerve for ten or fifteen minutes, traversing it in the normal nerve-current direction, will lower the excitability of the nerve. Urethral irritability is a most frequent cause of morbid action of the genital centers, and gives rise to various degrees of nerve irritation or sedation. Premature and painful emission may also be traced to congestion and irritation of the verumontanum. Similar impairment of functional activity may result reflexly from continued irritability of the mucous membrane of the urethra and ejaculatory ducts. An anodal application of a bare metallic sound, with a current of not more than one milliampère, and a kathodal plate over the lumbar vertebræ, will diminish the excessive irritability of this membrane.

(*To be continued.*)

CORRESPONDENCE.

CHICAGO.

The Provident Hospital and Training-school—What Constitutes Unprofessional or Dishonorable Conduct?—The Insane of Iowa.

The Provident Hospital and Training-school, the new institution which was founded here January 23, 1891, and dedicated to the public use May 4th, is in a flourishing condition. More than one hundred patients have been treated since the hospital was opened, and a number of nurses are being instructed in the best methods of caring for the sick and injured.

The organization of the hospital was due to the necessity of increased hospital facilities, and the undertaking has been successfully carried out. Indeed, the authorities of the institution are already talking of enlarging their quarters by securing the nine-room building in the rear of the hospital and turning it into a training-school for the nurses. This will doubtless be done as soon as sufficient funds can be collected, for the hospital relies for its support on the philanthropical. It treats patients who are unable to pay free of charge; those who can afford to do so make some return to the institution.

The medical staff is composed of Drs. R. N. Isham, and D. H. Williams, surgeons; Drs. Frank Billings, and Stanley M. Black, physicians; Drs. Henry T. Byford and A. A. Wesley, gynecologists; Dr. W. W. Jaggard, obstetrician; Dr. Horace M. Starkey, oculist and aurist.

The Secretaries of the State Board of Health of Nebraska have written to Attorney-General Hastings, asking what constitutes unprofessional or dishonorable conduct such as would authorize the Board of Secretaries to refuse to issue a certificate to a person applying therefor. The Attorney-General in his reply says:

"Section 14 of chapter 35 of the session laws of 1891, page 285, provides as follows: 'The board may refuse certificates to persons guilty of unprofessional or dishonorable conduct, and it may revoke certificates for like cause: Provided, always, that it has given the person an opportunity to be heard in his or her defence.'

"What is unprofessional or dishonorable conduct on the part of a practitioner of medicine is a question in which the courts appear to be wide apart. The section above quoted is a copy of the Illinois and Minnesota law upon the same subject. The code of ethics as laid down by medical associations furnishes us but little guidance concerning this question.

"To a greater or less degree each case of unprofessional or dishonorable conduct must be addressed to the sound judgment of the Board. No two cases will be quite similar in character. I therefore conclude that the Legislature meant by unprofessional or dishonorable conduct such conduct as was dishonorable and calculated to mislead or deceive—such practice, in short, as should not be indulged in by honorable men of any profession or calling."

Some of the figures from the recent report of the committee to visit the insane asylums of Iowa were recently published. Although there are three State insane asylums, located at Independence, Mount Pleasant, and Clarinda, beside the insane being cared for at nearly all the county poor-farms, the committee finds that insanity is on the increase to such an extent that it will be necessary, in order to properly look after the patients, to have another State institution, and recommends that such be erected.

PROGRESS IN THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

To the Editor of The Medical News,

Sir: As an item of medical news that will be of interest to many of the readers of your journal, allow me to mention the great improvements now being made in the facilities for teaching in the Medical College of the State of South Carolina. Prominent among the colleges of ante-bellum times, she graduated many men of distinction, but the impoverishment of the South resulting from the war depressed the College for many years, and it was only through the devotion of her professors, who gave both time and talent without charge, that her doors were kept open to the youth of our own and adjoining States. As a matter of fact, however, despite these discouraging incidents, and, also, notwithstanding a want of coöperation on the part of many of her sister colleges, this school has consistently and persistently striven for a higher standard of medical education.

At the opening of the post-session it was determined to no longer wait for organized movement, but to at once take the initiative in this important matter and demand of matriculants three full sessions, with graded courses of instruction. Consequent upon this increased time for study came the demand for increased facilities, and this has been met by the addition to the College of

a large annex, in which are located a most perfectly equipped chemical laboratory, and model bacteriological and pathological departments, thoroughly fitted out by the "Alumni Association of the Medical College of the State of South Carolina," wherein students will find every facility for acquiring an intimate knowledge of these important branches. The best instruments and accessories of German manufacture have been adopted. Thus has this honored old school accomplished her cherished desire, and feels that she is second to none other in those facilities that go so far to graduate accomplished physicians.

Her faculty feels justly gratified at the promising outlook for the future of her usefulness, and is sure that this will give pleasure to all her friends.

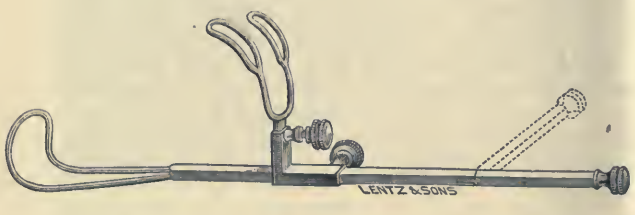
Very sincerely yours,

"MEDICUS."

CORRECTED ILLUSTRATION OF WEAGLY'S SELF-RETAINING PALATE RETRACTOR.

To the Editor of THE MEDICAL NEWS,

SIR: I enclose a corrected illustration of my retractor, in order that your readers may have a proper idea of the device. It will be remembered that no proof of the former illustration in THE MEDICAL NEWS of September 5, 1891, was sent to me by my instrument-maker, and hence the error. I would add that it is important to have the clamps or loops constructed of very light flexible wire, in order to permit of any desired change in curvature. The accompanying illustration gives a false idea that the material used in the nasal attachment is too heavy. Regretting the trouble caused you, I am, sir, etc.,



T. H. WEAGLY.

MARION, PA.

A CORRECTION.[1]

To the Editor of THE MEDICAL NEWS,

SIR: Will you allow me to correct a report of my remarks on the paper of Dr. Rockwell concerning electricity in extra-uterine pregnancy? Whlle I believe that faradism will "destroy the integument," I did not say so. I said that it would destroy the *embryo*. Medical faradic coils as ordinarily constructed will not destroy the skin, but currents from dynamos will. My belief as to the utility of faradism is based not alone on the results of treatment in the instances named, but on experiment with the products of conception obtained in cases of abortion in the specimens which have occurred in my own practice and in those sent me by friends. Microscopic examination in these instances shows that the mass is so disrupted by powerful faradic currents as to undoubtedly prevent further growth. The embryo thus treated is pulpified, so to speak.

The remarks of Dr. Morton appear to be incorrectly reported also. I do not think that he believes the primary faradic current to be "alternating;" it is direct and interrupted. The secondary, as found in ordinary medical coils is alternating, but it may be made direct (though interrupted) by "zig-zags" or commutators.

Sincerely yours,

WM. R. D. BLACKWOOD.

246 NORTH TWENTIETH STREET,
PHILADELPHIA, October 17, 1891.

[1] To avoid misunderstanding we would say that the Report of the American Electro-therapeutic Association as published by THE NEWS is furnished by the official stenographer of the Association.—*Editor of* THE NEWS.

REVIEW.

SURGICAL BACTERIOLOGY. By N. SENN, M.D., Ph.D., Professor of Surgery in Rush Medical College, Chicago, and in the Chicago Polyclinic; Attending Surgeon to the Milwaukee Hospital; Consulting Surgeon to the Milwaukee County Hospital and to the Milwaukee County Insane Asylum, etc. Second edition, thoroughly revised. Pp. 271, with thirteen plates. Philadelphia: Lea Brothers & Co., 1891.

THIS volume is rich in material valuable to the surgeon. The advance in surgical bacteriology has been so rapid that nothing written on the subject is likely to have value unless it is recent. For this reason the material for this work has been largely obtained from current literature, and the aim has been to give the results of the best work of the ablest men. There are, therefore, given conflicting opinions, credited to authority, without attempt at harmonizing them; but in many cases the author has also stated his own convictions. The second edition represents a thorough revision of the first, with many additions that bring the work to date.

There is stated to be "substantial proof that in some infectious diseases heredity is traceable to direct transmission of the specific microbes floating in the circulation of the mother to the fetus, through the thin wall which separates the maternal from the fetal blood."

The existence of pathogenic microbes in the healthy body is spoken of as "probable." These may apparently remain inactive until a trauma or some pathological product supplies a convenient field for their growth. When the skin is intact the suppuration of a tumor or hyperplastic lymphatic gland is accounted for by abnormal vascular conditions that have served to arrest floating microbes.

The various microbic diseases that are met in surgical practice, such as tetanus and erysipelas, are in turn considered. An interesting chapter is that devoted to "Clinical Forms of Surgical Tuberculosis." The disease described by Rosenbach, under the name of erysipeloid, is also noticed. Quite justly the microbic origin of tumors is considered still unproved. The author narrates an experiment of his own in transplanting carcinomatous tissue from an infected to a healthy locality in the human subject. The graft united, but was afterward completely absorbed. The same result was obtained in his twenty-four experiments on animals. The following is his concluding opinion: "There has been, so far, no

proof furnished of the existence of a specific bacillus in carcinoma or sarcoma, and the inoculation and implantation experiments have proved so seldom successful, and the experiments which at first appeared successful have later been shown to be so deceptive, that the microbic origin of malignant tumors has not only not been established, but rendered improbable."

The book represents a great deal of labor in summarizing the work of others, particularly of German and French investigators. Indeed, this is one of its chief recommendations, as the reader has an opportunity to arrive at the best opinion with but little labor. Abundant references are conveniently incorporated in the text.

NEWS ITEMS.

Annales d'Oculistique. — This long-established and widely known ophthalmological journal, conducted during many years with distinguished ability by the late Professor Warlomont, has, since the death of that illustrious leader in ophthalmology, passed into the editorial hands of Drs. Valude and Sulzer, who have transferred the office of publication from Brussels to Paris.

The new management has doubled the size of the journal and promises to increase its usefulness.

Dr. George T. Stevens, of New York, the American collaborator, will report matters of ophthalmological interest from the United States.

Those who are familiar with *Annales d' Oculistique* will marked already have observed in the last two numbers a change in the prominence given to American literature.

The Philadelphia Polyclinic has issued its Ninth Annual Announcement, a survey of which affords an indication of the substantial progress that this institution has made in the comparatively few years of its existence. With a strong corps of teachers in the various general and special departments of medicine, selected from the best active men in the local profession, and with a commodious building, liberally equipped and specially adapted to its purposes, the Polyclinic has already become an important factor in medical education, and gives promise of increasing that importance.

The Southern Surgical and Gynecological Association will hold its annual session at Richmond, Va., November 10, 11, and 12, 1891. An interesting scientific program has been provided for. Dr. L. S. McMurtry, of Louisville, is the President; Dr. W. E. B. Davis, of Birmingham, Ala., Secretary; and Dr. Hunter McGuire, of Richmond, Chairman of the Committee of Arrangements. Members of the medical profession are cordially invited to the meeting.

Cremation.—Cremation is coming more and more into favor in Germany. In addition to the crematorium which has been in operation at Gotha since 1877, and where from five to six hundred bodies are cremated annually, and another which was recently established at Hamburg, a new one was recently consecrated at Ohlsdorf, and another at Carlsruhe.

Contributions to Mechanico-Therapeutics and Orthopedics is the name of a new publication to be devoted to the objects indicated by its title, under the editorship of Dr. L. Wischnewetzky. The first number contains, in addition to an editorial preface, a monograph on The Mechanico-Therapeutic Institute, by Dr. Gustaf Zander, of Stockholm.

American Orthopedic Association.—The following officers were elected for the ensuing year: President, Dr. Benjamin Lee, of Philadelphia; Vice-Presidents, Dr. R. H. Sayre and Dr. H. L. Taylor, of New York; Corresponding Secretary, Dr. Royal Whitman, of New York; Secretary and Treasurer, Dr. John Ridlon, of New York.

Latent Tuberculosis,—A prize of three thousand francs ($600) has been offered for the best essay on the subject of "Latent Tuberculosis," to be presented to the next Congress of Tuberculosis, which will probably meet in 1893.

A Pasteur Institute in Cochin China.—A Pasteur Institute was opened at Saigon on June 1st, under the auspices of the French Government. Though primarily intended for the practice of anti-rabic inoculation, the work of the institute will extend over the whole field of microbiology.

A Bacteriological Institute is to be established at St. Petersburg, in accordance with a decree of the Czar, who has allocated a considerable sum for the purpose. Dr. Gabrylowicz, of Vienna, is to be the director.

Dr. Alphons von Rosthorn, of Vienna, has been appointed temporary Director of the Obstetric and Gynecologic Clinic of the University of Prague, *vice* Schauta, elected to succeed Braun at Vienna.

The Editorial Committee of the *University Medical Magazine*, Drs. G. E. de Schweinitz and Edward Martin, resigned on the first of October, and in their places were elected Drs. J. Howe Adams and A. C. Wood.

Death from Epsom Salts.—The *British Medical Journal* reports the case of a woman who, feeling ill, took four ounces of Epsom salts at a single dose and in an hour was dead.

Dr. Woods Hutchinson, of Des Moines, Iowa, editor of the *Vis Medicatrix*, has been elected Professor of Anatomy in the Iowa State University.

Professor Franz Exner has been elected to fill the chair of Physics at the University of Vienna, to succeed Goldschmidt, who retires, seventy years old.

Professor Moos has been elected Ordinary Honorary Professor in the Medical Faculty of the University of Heidelberg.

Professor Rubner, of Marburg, has succeeded Professor Koch in the chair of Hygiene at Berlin.

Dr. Ogner has been elected Professor Extraordinary of Comparative Anatomy at the University of Moscow.

Professor August Gartner, of Jena, has accepted the chair of Hygiene at Marburg.

Dr. John M. Keating has taken up the practice of medicine at Colorado Springs, devoting himself to the treatment of the diseases of women and children.

BOOKS AND PAMPHLETS RECEIVED.

Ministering Women. The Story of the Royal National Pension Fund for Nurses. By George W. Potter, M.D. London: "The Hospital," Limited, 1891.

Diseases and Refraction of the Eye. By N. C. Macnamara, F.R.C.S., and Gustavus Hartridge, F.R.C.S. Fifth Edition. Philadelphia: P. Blakiston, Son & Co., 1891.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. Philadelphia: P. Blakiston, Son & Co., 1891.

Addresses, Papers, and Discussions in the Section of Surgery and Anatomy at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., May 5–8, 1891. Chicago: 1891.

Post-graduate Course of Lectures, Medical Faculty, University of Toronto. Delivered December 16, 18, and 19, 1890. Toronto: The J. E. Bryant Company (Limited), 1891. Reprint.

Burdett's "Hospital" Annual and Year-book of Philanthropy, 1891–92. Edited by Henry C. Burdett. London: "The Hospital" (Limited), 140 Strand, W. C.

Vol. XXV. Transactions of the State Medical Society of Wisconsin, for the Year 1891. Constitution, By-laws, and List of Members. Madison, Wis.: Tracy, Gibbs & Co., 1891.

Announcement for 1891–92 of the College of Medicine of the National Normal University of Lebanon, Ohio. Reprint.

A Case of Disseminated Sclerosis, Presenting the Clinical Aspect of Primary Spastic Paraplegia, with Atrophy of Both Optic Nerves. By Charles Zimmerman, M.D., of Milwaukee, Wis. Reprint, 1891.

Prodromal and Early Symptoms of Bright's Disease. By Charles F. Withington, M.D., of Roxbury. Reprint, 1891.

The Eye-symptoms of Brain Disease. By Charles Zimmerman, M.D., of Milwaukee, Wis. Reprint, 1891

Which is Scientific Medicine? By M. W. Van Denburg, A.M., M.D., of Fort Edward, N. Y. October, 1891. Reprint.

Common Sense in Medicine. By S. C. Gordon, M.D., of Portland, Me. Boston, 1891. Reprint.

Surgical and Mechanical Treatment of the Deformities Following Infantile Spinal Paralysis. By De Forest Willard, M.D., Ph.D. Reprint, 1891.

Two Cases of Removal of Laminæ for Spinal Fracture. By De Forest Willard, M.D. Reprint, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 13 TO OCTOBER 19, 1891.

APPEL, DANIEL M., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect about the 6th proximo.

By direction of the President, ARTHUR W. TAYLOR, *Captain and Assistant Surgeon*, will report in person to Colonel John Mendenhall, Second Artillery, President of the Army Retiring Board, at Fort Adams, R. I., for examination by the Board.

BEALL, GEORGE T., *Captain and Medical Storekeeper.*—Is granted leave of absence for one month. During the absence of Captain Beall, Charles B. Ewing, Assistant Surgeon and Attending Surgeon at St. Louis, Mo., will take charge of the Medical Purveying Department in that city.

GANDY, CHARLES M., *Captain and Assistant Surgeon.*—Is relieved from duty with the Army Medical Board, to take effect on its final adjournment, and ordered to Fort Yellowstone, Wyoming Territory.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort McKinney, Wyoming Territory, and ordered to Fort Grant, Arizona Territory, for duty.

MCVAY, HARLAN E., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Mackinaw, Michigan, and ordered to Fort Wingate, New Mexico.

GLENNAN, JAMES D., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Riley, Kansas, and ordered to Camp Oklahoma, Oklahoma Territory.

IRELAND, MERRITTE W., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Riley, Kansas.

BENHAM, ROBERT B., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Hamilton, New York, and ordered to Mount Vernon Barracks, Alabama, for duty.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 17, 1891.

MAGRUDER, A. F., *Surgeon.*—Ordered to the "Boston."

DIXON, W. S., *Surgeon.*—Detached from the "Boston," and granted leave for two months.

MARSTELLER, E. H., *Passed Assistant Surgeon.*—Ordered to special duty at Baltimore, Md.

DRAKE, N. H., *Passed Assistant Surgeon.*—Detached from the "Albatross," and granted leave for two months.

WIEBER, F. W. F., *Passed Assistant Surgeon.*—Detached from the "Pensacola," and ordered to the "Albatross."

BRADLEY, GEORGE P., *Surgeon.*—Detached from Naval Hospital, Chelsea, Mass., and ordered to the Receiving-ship "Wabash."

BRAITHWAIT, F. G., *Assistant Surgeon.*—Detached from the "Wabash," and ordered to Naval Hospital, Chelsea, Mass.

BEYER, H. G., *Passed Assistant Surgeon.*—Ordered to Naval Academy, Annapolis, Md.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING OCTOBER 19, 1891.

VANSANT, JOHN, *Surgeon.*—Granted leave of absence for twenty-three days, October 8, 1891.

LONG, W. H., *Surgeon.*—Granted leave of absence for thirty days, October 7, 1891.

HAMILTON, J. B., *Surgeon.*—To represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

GASSAWAY, J. M., *Surgeon.*—Leave of absence extended for five days, September 28, 1891.

WHEELER, W. A., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, Ocrober 7, 1891.

PECKHAM, C. T., *Passed Assistant Surgeon.*—To represent the Service at the meeting of the Mississippi Valley Medical Association, October 2, 1891.

BRATTON, W. D., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, October 7, 1891.

PETTUS, W. J., *Passed Assistant Surgeon.*—To proced to Norfolk, Va., for temporary duty, October 2, 1891.

MAGRUDER, G. M., *Passed Assistant Surgeon.*—Granted leave of absence for twenty days, October 7, 1891.

WOODWARD, R. M., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, October 6, 1891.

VAUGHAN, G. T., *Assistant Surgeon.*—Granted leave ot absence for thirty days, October 6, 1891.

COBB, J. O., *Assistant Surgeon.*—To proceed to Buffalo, N. Y., for temporary duty, October 7, 1891.

GUITERAS, G. M., *Assistant Surgeon.*—To proceed to Mobile, Ala., Pensacola, and Mullet Key, Fla, on special duty, October 10, 1891.

BROWN, B W., *Assistant Surgeon.*—To report to the medical officer in command, San Francisco, Cal., for duty, October 3, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints wi be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIX. SATURDAY, OCTOBER 31, 1891. No. 18.

ORIGINAL ARTICLES.

SEVEN RECENT CASES OF BRAIN-SURGERY.[1]

BY WILLIAM A. HAMMOND, M.D.,
OF WASHINGTON, D. C.

THE following cases of operations performed upon the skull and brain for the relief of cerebral disease, occurring since the subject of brain-surgery has developed into an art approaching exactness, will, I think, prove of interest to the Association. Besides these, I have trephined thirty-one times for epilepsy with but one death, but as these operations were undertaken with reference more to supposed injury of the brain from obvious skull-lesions, and not from a consideration of the symptoms, I omit for the present further notice of them, merely calling attention to the fact that twenty-three of them are classified in my *Treatise on Diseases of the Nervous System.*

The cases, however, of which I am now about to speak are of somewhat different character, because not only was the seat of a real or supposed injury a factor in determining where to operate, but the symptoms, their nature and location, were even of more importance in deciding upon the situation of the disease, the consequent point on the skull with which it was in relation, and the extent to which the operation should be carried.

CASE I.—J. V. had several years previously been under my care for epilepsy, the apparent consequence of a blow with a stone received when he was eight years old. The peculiar feature of his disease was that he was a subject of double consciousness, passing suddenly from the normal to the abnormal condition, during which he was apparently in full possession of his reasoning faculties, but of which, when he emerged therefrom, he had no recollection. Upon one occasion he started from New York to go to Indianapolis, but when he came to himself he was in England and had been there for several weeks. During this time he conducted himself in an entirely orderly and rational manner. Upon another occasion he was absent from home for three weeks, and when he recovered his consciousness he was in Baltimore living at a hotel and about entering into negotiations for the purchase of a bookstore. His conduct had been exemplary in every respect. In the interval between these seizures he was subject to the ordinary epileptic attacks both of the grand and petit mal variety. Under the influence of the bromides his attacks were arrested for over a year, but they finally returned, and on my advising an operation he determined to enter my Sanitarium at Washington for the purpose of having it performed.

At this time he was forty-one years of age, large, well-formed, and of good habits. Upon examination a depression was found in the skull, involving the right parietal bone near its posterior superior angle. At this place there was almost constant pain, but there were no symptoms, such as paralysis of motion or of sensibility, referable to any other part of the body. The depression in the bone was an inch and a quarter in length, and I determined that the center of it was immediately over the fissure of Rolando and the horizontal portion of the ascending frontal and the ascending parietal convolutions. I operated on the 15th of April, 1889. Anesthesia was produced by ether. A semicircular incision was made through the scalp, the pericranium raised from the bone, and the trephine applied over the center of the depression. Upon lifting the button of bone it was found that there had been no fracture of the skull and that the dura mater was apparently in a healthy condition. The rongeur was used so that the entire opening in the skull was about an inch and a quarter in diameter. No evidences of disease, however, were discovered. In considering whether or not to open the membranes and expose the brain I was influenced by the consideration of the facts that although the injury to the skull was immediately over the superior part of the ascending frontal and ascending parietal convolutions there were no symptoms involving the power of motion of the upper or lower extremities. I, therefore, came to the conclusion that there was no injury or disease of these convolutions and that it would be inadvisable to expose the brain. Accordingly, the wound was closed without any of the bone being replaced and the patient made a rapid recovery, the whole wound uniting without suppuration. Twice during the subsequent week, the scalp having become puffy, the fluid, consisting of bloody serum, was drawn off by means of a large hypodermatic syringe. Although the patient was better at the Sanitarium at the end of the second week, and remained without pain or seizure for three months, both eventually returned and he is now about in his usual condition. I think that if I had to do this operation over again I should pare off the surface of the convolutions, especially in the light of the subsequently developed fact that there has been no improvement in the patient's condition.

CASE II.—J. H., thirty-five years of age, entered the Sanitarium May 13, 1889, being unable to walk or to lift the right arm; the tendon reflex of knees,

[1] Read before the American Neurological Association, Sept 23, 1891.

especially of the right, was much exaggerated; ankle-clonus was well marked on both sides; voluntary muscular power of right arm and leg was almost entirely abolished, but with sensation apparently unaffected. Upon examining the head a large depression of the bone was found over the left parietal eminence. This was due to a blow from a saber during the war. Subsequently a large piece of bone exfoliated. He remained in comparatively good health until about seven years ago, when he began to drag the right leg in walking and to lose power in the right arm. He occasionally suffered from pain in the head at the seat of the injury. The paralysis of the right arm and leg gradually increased until nearly complete, when he came under my observation. About two years previously to his entering the Sanitarium his voice began to acquire a higher pitch than was natural and there was considerable difficulty of speech due to impairment of the power of the muscles of articulation, especially those of the lips. So far as the mind was concerned, the intellect did not seem to be materially enfeebled, but his emotional faculties were weak, just as they so frequently are in persons that have suffered from cerebral hemorrhage. A slight thing made him shed tears profusely. There was no history of syphilis. I regarded the paralysis of the arm and leg and exaggerated reflexes to be due to degeneration of the left antero-lateral column of the cord, and that there was probably also a corresponding condition in its incipiency involving the right antero-lateral column. In regard to the brain-lesion and the consequent disease I did not venture upon an exact diagnosis, but I was inclined to believe that the membranes had been the seat of inflammation, and that the cortex of the ascending frontal and ascending parietal convolutions had likewise been involved. The difficulty of speech, arising as it did mainly from impaired motor power of the lips, indicated that the center for the movements of these organs, the posterior part of the middle frontal convolution, was likewise implicated. He improved to some extent under treatment, consisting mainly of iodide of potassium and electricity, but this was not sufficient to warrant a hope of cure from such measures, and on May 20th I performed the operation of trephining.

The patient was etherized, and a semilunar incision was made in the scalp. The trephine was applied so as to include the center of the depression, which was about two inches in extent antero-posteriorly, and embracing within its limits parts of the ascending parietal, ascending frontal, and middle frontal convolutions. Several spicules of bone were found adherent to the button removed by the trephine. By means of the rongeur, the opening of the skull was enlarged to about the size of a silver dollar. Several fragments of depressed bone were found united to the portion removed. The opening in the skull now included all of the injured portion. There was a thick mass of false membrane adherent to the bone taken away. This I dissected off, leaving an apparently healthy membrane below. This membranous mass was quite vascular, so that its removal occasioned considerable hemorrhage. A drainage-tube was inserted into the wound at its posterior angle, since, notwithstanding the antiseptic measures employed, I was apprehensive that the necessary violence used might lead to suppuration. Nevertheless, the union was complete throughout by the third day, and the tube and sutures were removed. The patient made a perfect recovery, without fever or inconvenience of any kind.

Almost immediately improvement was manifested both in the paralyzed arm and leg, so that by June 12th he was able to walk fairly well with a cane and could raise his arm to his head. Electricity (faradic) was applied to these parts. The voice had become much stronger, and the movements of the lips were such that he could now speak without stammering. The tendon reflex of the left side was still somewhat exaggerated; the ankle-clonus was materially lessened. He continued to improve until June 17th, when he left the institution sooner than he ought to have gone. I have had no information of a direct character, but have understood that he continued to improve for several weeks after he left the Sanitarium, when he again gradually grew worse.

The beneficial effects of the operation were in this case clearly manifested. Doubtless the involvement of the spinal cord and the motor paralysis were due to pressure exerted upon the ascending parietal, the ascending frontal, and middle frontal convolutions. A second operation might have been advisable.

CASE III.—L. T., female, aged three years, entered the Sanitarium on May 13, 1889, the subject of epilepsy, from which she had suffered about a year, and that had resulted, not only in her inability to acquire a further power of articulation, but in loss of ability to use the words that she had already learned. Though sufficiently intelligent for her age and quick in her movements, there was thus an entire loss of the faculty of speech, and epileptic convulsions occurred about once a month. There was the history of a fall from her nurse's arms, and her mother attributed the convulsions and the loss of speech to the injury of the head then sustained. So far as any marks were concerned there was nothing to show that the skull, or even the scalp, had been injured, but the mother was very clear that the blow had been received on the left side of the head, immediately above the ear. I advised trephining, and, the parents consenting, the operation was performed on May 22, 1889. My object was to trephine the skull at a point about an inch in front of the fissure of Rolando, and about a quarter of an inch above its junction with the fissure of Sylvius, so as to be immediately over the posterior part of the third frontal convolution. No injury of the bone was found, but the portion removed was a quarter of an inch thicker than was normal, so that it doubtless exercised considerable pressure on the brain at that point. The dura mater was apparently healthy.

The wound healed throughout by first intention, without there being the slightest untoward symptoms. The child remained under my constant observation for several weeks. She had no fit during this period, and was beginning to talk when she left

the institution. Improvement in the faculty of speech, as I learned by several letters from her mother, was continuous, and she now (at a little over five years of age) speaks as well as most children of five years old. There has been no convulsion in all this period, and, to all appearance, the child is in perfect health. The last letter from her mother stated that the child's uncle came into the room a few days previously, and remarked jocosely that he was "going to send the girl to Dr. Hammond to have something done to stop her talking."

In this case I do not know to what to attribute the remarkable success of the operation, unless to the fact, as I have stated, that it relieved an existing pressure on the center for articulate speech.

Case IV.—Miss G. entered my Sanitarium on July 20, 1890, suffering from an old left hemiplegia, epileptic convulsions, mental deterioration, and occasional paroxysms of maniacal excitement. The clinical history is briefly as follows:[1] The patient was nineteen years of age, her father an Italian, her mother an American. The family history was good, the father and mother healthy, and there was no history of syphilis. The patient was born healthy and normal. During an attack of cholera infantum at five weeks of age she became rigid, the arms and legs contracted and flexed, in more pronounced degree on the left side than on the right. The right side recovered, but the left side remained more or less contracted. She had an epileptic attack at five years of age, and another at six. After that the convulsions became more frequent, occurring at intervals of from one to six months.

For the last five years she has exhibited marked symptoms of mental derangement, committing many singular actions and being very passionate, excitable, silly, and weak-minded. Examining her on admission to the Sanitarium, I found that both mind and body were undeveloped. The left hand was in a state of extreme flexure and was permanently contracted. The whole extremity was in a state of atrophy, and there was not a muscle that was not more or less paralyzed. The left lower extremity was in a similar state, though in a much less degree.

The left side of the face was much less mobile than the right.

I gave it as my opinion that she was suffering from a morbid growth of some kind, involving the left parietal lobe and part of the frontal lobe, especially the ascending parietal convolution and the ascending frontal convolution. Though almost hopeless, I expressed my willingness to undertake an operation for the patient's relief.

A horseshoe incision with the convexity directed posteriorly was made; flaps of integument and pericranium were raised and an inch-trephine applied so that the center-pin was fixed on the line of what I had determined to be the course of the fissure of Rolando and about half an inch inferiorly to the sagittal suture. The crown of the instrument was intended to embrace within its limits that portion of the skull immediately over the superior part of the ascending frontal and ascending parietal convolutions.

The button of bone was removed and the dura mater, arachnoid, and pia mater were found to be adherent to each other. A bluish membrane now protruded, very much resembling in appearance the longitudinal sinus. Renewed examination showed that it could not be this vessel, and it was at once punctured with a sharp-pointed bistoury. Immediately a stream of serous fluid, free from odor, spurted out as if from a syringe to a distance of two or three feet, and continued to flow for about ten minutes with diminished force. The wound in the membrane was enlarged to the extent of half an inch and a probe was introduced; it could be passed downward and forward for about two inches without meeting with an obstruction.

A drainage-tube was introduced and at once the fluid began to flow more freely. The tube was introduced along the line of the fissure of Rolando and passed in for three inches without meeting with obstruction. The button of bone was not replaced, but the wound was closed around the drainage-tube, which was left in place and through which fluid still continued to flow.

Soon after being put to bed the patient had a severe chill, which was controlled by applying bags of hot water to the body. On emerging from the state of anesthesia the patient was noisy and excited and complained of some pain in the head. The temperature varied from 100° to 104° on the 28th of July, when she died in a state of coma on the sixth day after the operation.

At the post-mortem examination adhesions were found to exist between the right frontal lobe and the frontal bone; there was also thickening of the dura mater throughout the course of the longitudinal sinus, extending for about an inch on each side. Nearly the whole of the right parietal lobe and upper and posterior part of the frontal lobe seemed to have disappeared, for the membranes were greatly collapsed. The membranes were found thickened throughout their whole extent and were strongly adherent to the base of the skull and to each other. A cyst was found coëxistent with nearly the whole right parietal lobe, the convolutions of which portion had entirely disappeared. The ascending frontal convolution, except its inferior and horizontal portion, was also absent; otherwise the frontal lobe was in good condition. The anterior portion of the occipital lobe was also implicated, so that a portion of the middle and inferior convolutions had disappeared. Inferiorly it was ascertained that the cyst involved the temporal lobe, and that the superior temporal convolution and about one-half of the middle temporal convolution were absent. Further examination showed that not a vestige of the island of Reil remained, that the anterior and external thirds of the caudate nucleus and a like portion of the lenticular nucleus of the corpus striatum were absent, and that the internal capsule was greatly atrophied. Continuing the dissection, it was discovered that

[1] The report of this case in full will be found in the New York Medical Journal of September 27, 1890.

the cyst was separated from the lateral ventricle anteriorly by a very thin lamina of cerebral tissue.

A second cyst of about the size of a large almond and involving the inferior convolution was also found to exist. There were no cerebritis, no recent meningitis, and no hemorrhage.

It is thus seen that the diagnosis was substantially correct, though the lesion was much more extensive than there was any reason to suspect. Probably the original disease was an extensive meningitis, the arachnoid being especially implicated in the regions where the cysts were discovered. It is certainly remarkable that life should persist for nearly nineteen years under such a condition of brain-disease. The fact of the destruction of the island of Reil is interesting in connection with the circumstance that it was on the right side and that there had been little speech-disturbance. In other respects it is seen that the case is strikingly corroborative of the doctrine of cerebral localization as laid down by Nothnagel, Ferrier, Exner, and others.

In regard to the cause of death I have no very satisfactory explanation to offer. The patient had fully recovered from the shock of the operation, there was no recent inflammatory action anywhere in the brain or its membranes, and the wound was in a perfectly healthy condition, the scalp having united, as I have said, throughout nearly its whole extent. An examination of the lungs and kidneys was not permitted, but there is no room for thinking that these organs were in a state of disease.

Case V.—T. K., thirty-eight years of age, entered the Sanitarium October 8, 1890, suffering from epileptic convulsions and partial paralysis of the left upper and lower extremities. Twenty years previously he had fallen from a height upon a marble floor and sustained a fracture of the skull involving the posterior superior angle of the right parietal bone. No operation was performed at the time, but several pieces of bone came away spontaneously, so that when he came under my notice there was a fissure in the skull at the point indicated, irregularly triangular in shape and about the size of a half-dollar coin. There was a good deal of cicatricial tissue and the scalp was depressed at its lowest depth, fully a quarter of an inch below the level of the surrounding parts.

He entered the Sanitarium for the purpose of having the operation of trephining performed, understanding perfectly that the operation might not only prove unsuccessful in relieving him of his symptoms, but might also result in his death. I was under the impression that there was a cyst at the point of injury, and that this was covered by the brain and scalp at the parts where the bone was deficient, and that possibly there were some fragments of bone that ought to be removed. A semilunar incision with its convexity directed forward was made in the scalp, and the crown of the trephine was applied to the bone so that its edge not quite touched the lower border of the fissure. The removal of the button of bone was followed by a gush of serous fluid, and by passing a probe in all directions I then discovered that there was no brain-injury in contact with the scalp, nor with the skull to the extent of over an inch in circumference from the opening made by the trephine. As a result of the original injury, therefore, there had been a large loss of brain-substance, and I had opened a cyst, the walls of which consisted externally of the cerebral membranes, the skull, and the scalp. Judging from the large amount of fluid that exuded, I had no doubt that this cyst communicated with the lateral ventricle.

The patient rallied from the operation, but became very weak and faint shortly afterward—the result, doubtless, of the loss of so large a quantity of cerebro-spinal fluid. I, therefore, removed the drainage-tube which had been inserted and closed up the wound throughout its whole extent. By the third day it had entirely united by the first intention; the fluid, however, continued to increase in quantity so that it was necessary to tap the scalp several times in order to drain it off. Coincidentally with this, increased somnolence, approaching stupor, was developed, but this condition disappeared at once on the evacuation of the fluid. At no time during the course of treatment were there any evidences of inflammation, but the patient continued to grow weaker and at times was slightly delirious, though he improved to such an extent that he was able to sit up and take a drive of several miles into the country. He gradually sank until he died, November 28th, fifty days after the operation, and apparently from sheer exhaustion. He had no convulsion after the operation, but there was no improvement in the paralysis either of the upper or lower extremity. The only other change observed was a remarkable slowness of speech, a sort of staccato articulation, but there was at no time any indication of aphasia. The cyst was rather superficial, but it was about two inches and a half in its horizontal diameter and three inches and a half in its vertical diameter.

Case VI.—W. H., twenty-eight years of age, entered the Sanitarium October 21, 1890, suffering from left hemiplegia, epilepsy, and imbecility. The diagnosis in this case was cerebral syphilis, and he was treated with large doses of iodide of potassium, hot douches to the spine, and electricity. The iodide was carried to the extent of half an ounce three times a day. He improved from the very beginning of the treatment, and on January 18th went to his home in Texas free from all abnormal symptoms. He had had no convulsions in all this time, although they had previously occurred at the rate of two or three every week. The hemiplegia entirely disappeared and his mind was restored to its naturally good condition. My opinion was that he was suffering from a gummatous tumor of the cerebral cortex involving the ascending frontal and ascending parietal convolutions, and that under the use of the iodide of potassium absorption had taken place. But in March, 1891, all the symptoms gradually returned and he was again brought to the Sanitarium for treatment and entered the institution May 30th. At this time he was the subject of repeated convulsions, he was unable to walk from complete paralysis of the left lower extremity, and from like cause the arm was entirely helpless. His mind was a

complete blank, and at times he was distinctly maniacal. He could not give an intelligent answer to any question, and exhibited all the indications of suffering severe pain in the head, apparently on the right side. I at once began the administration of the iodide of potassium, though it was not carried up to the extent of over two hundred grains three times a day, but without benefit, the symptoms persisting in all their original intensity. I therefore determined to trephine him so as to expose the centers for motion of the left upper and lower extremities, namely, the right ascending frontal and ascending parietal convolutions. On removing the button of bone and laying open the dura mater the membranes were seen to be opalescent and a small quantity of serous fluid escaped. As there were no indications of a growth at this point, and as the revealed condition was such as would probably be relieved by the operation, I decided not to proceed further. The wound was, therefore, closed, and it united entirely by first intention without the occurrence of a single untoward symptom.

The patient began to improve at once, mentally and physically, and on August 15th returned home as well as he had ever been in his life.

The success of the operation in this case was marked, but was due, not as I supposed it might be, to the removal of a morbid growth, but to the relief which it gave to the pressure exerted upon the brain by the inflamed membranes, and the small amount of fluid that had collected. Whether or not the improvement will continue is, of course, a matter of conjecture; but, as a measure of precaution, I have instructed the man to use the iodide of potassium in large doses every alternate month during the next two or three years.

I regard this case as most instructive, because I have no doubt that the condition discovered bore the relation of a cause to the symptoms; and that such cases can be relieved by the comparatively safe operation of trephining is a point in cerebral pathology and cerebral surgery of very great interest.

Case VII.—W. K., twenty-eight years old, entered the Sanitarium originally on December 19, 1890, suffering from a constant, dull, heavy ache in the occipital region, with occasional attacks of vertigo. The pain was so severe in character as utterly to unfit him for his business, and he had been compelled to refrain from all mental work. He had suffered for over two years when he came under my observation. Examination showed the kidneys to be healthy, and that there were no disturbances of sensation or motility in any other parts of the body. Speech was unaffected, and the intellect was unimpaired in all its parts. Seven years previously he had been struck by a stone in the right frontal region, about an inch above the supra-orbital ridge, and a cicatrix and a depression existed at this point. He was stunned by the blow, and was insensible for several days, but made a good recovery without an operation. There was no pain in this region, however, and I did not associate the injury with the pain in the back of the head from which he suffered. No treatment, however, that I gave him proved of the slightest benefit, though I continued it for several months after he left the institution.

But, on reflecting upon the case, I resolved to submit to him the propriety of an operation, and, with a full knowledge of the uncertainty of the result, he at once consented to have me trephine the skull at the point of injury. He therefore reëntered the Sanitarium on July 30, 1891, and on August 2d I operated. On raising the button of bone that corresponded with the most depressed portion of the cicatrix, I discovered a large spicule of bone attached thereto. Passing a probe between the skull and the dura mater around the opening, I could discover no other evidences of fracture, but there was a mass of highly vascular membranous tissue, from the necessary injury of which some two ounces of blood were lost, and I was obliged to ligate a vein as large as a crow-quill, from which the blood was flowing in full stream. I was afraid to remove this mass with the knife on account of the hemorrhage that I knew would result, and, moreover, I found that the bleeding had caused it to shrink to a great extent. But, with the fingers and the handle of the scalpel, I detached the greater part of it and then closed the wound. By the third day the union was complete throughout and the patient at once expressed himself as being greatly relieved. On the fourth day I allowed him to leave his bed, and on August 13th he returned home, relieved, but by no means cured. A letter, however, received from him a few days since, states that the improvement has continued, that the pain has almost entirely disappeared, that he feels mentally bright and active, and is desirous of resuming his business.

This case is also extremely interesting, and the success obtained is in the highest degree instructive. If the symptoms from which this patient suffered had been such as to endanger his life, or had been more extensive than they were, I should have removed a greater portion of the skull and carried my exploration much further than I did, but I did not consider myself justified in thus seriously increasing the risk of a fatal result for the relief of mere pain.

NOTE UPON A POSSIBLE SERVICE TO BE EXPECTED FROM DIURETIN IN GENITO-URINARY SURGERY.[1]

By EDWARD L. KEYES, M.D.,
of New York.

Outside of the usual complications liable to attend any cutting operation, the surgeon who deals with the genito-urinary tract has to contemplate, and if possible guard against, that other mysterious concomitant of operations upon the urethra and

[1] Read at the meeting of the American Association of Andrology and Syphilology, held in Washington, September 22–25, 1891.

bladder, known under various names, and often called "urinary fever."

The theories about it are numerous. In the present connection it does not interest us to ascribe it to urinary intoxication, shock, kidney-congestion, or to any special cause. It exists. We all recognize it, we all fear it, and—I speak for myself—we do not thoroughly understand it. Let me illustrate: Of a considerable number of supra-pubic, perineal, and urethral operations, performed during the past year, I have lost only one. Many of the cases were, to all appearances, infinitely more desperate than this one. A number of them had albumin, casts, pus, and blood without stint, in the urine; yet all other cases recovered. This fatal one was in an old gentleman, the father of a prominent physician. His urine was as clear as crystal and free from albumin, and his bladder contained no pus. A year before my operation he had his urethra divulsed up to an enormous size, and very large sounds were used without a chill or any bad symptoms. His life, however, had become a burden by reason of the necessity for repeated use of the catheter. The cystoscope showed a minute third lobe, with a moderately healthy bladder. I cut this patient above the pubes. I nipped off his minute third lobe, which stuck up as large as a small marble in the internal urethral orifice. There was no bleeding; he took a moderate amount of the anesthetic; he had been catheterized constantly and divulsed before without accident, yet, within half an hour after my operation, he had a chill and absolute suppression, from which he never rallied. This was, I believe, pernicious urinary fever. Why did he have it? I do not know, nor can anyone tell me to my satisfaction. I did not give this patient diuretin. I did not know about it at the date of my operation upon him.

To prevent urinary fever various things have been done: all kinds of preparation of the patient, and the use of drugs—notably aconite, pilocarpine, quinine, etc.—ordered. I never thought well of aconite; I did once confide in pilocarpine, but gave it up. I have long since ceased to use quinine; I now never administer it before an operation, believing it to be absolutely devoid of value. Local urethral antisepsis I believe to be also much overrated. Germ-killing in the various urinary passages is a praiseworthy pursuit, but perhaps more difficult than those who pretend to follow it conceive it to be. There are two methods, one of which tries to render the passages pure by antiseptic irrigation from below; the other essays to purify the stream at its source, by the administration of various substances, notably salol, boric acid, naphthalin, saccharin, the benzoates, etc. Added to this, the instruments are disinfected, and then the requirements of modern surgery have been complied with—yet none of these methods secures us against urinary fever. They doubtless aid in so doing, and are useful as far as they go. Cleanliness and disinfection are as essential now to successful surgery as anatomical knowledge, manual dexterity, and general experience—but none of these is final in eliminating the possibility of urinary fever. Instruments and hands can be perfectly disinfected, the urine and the urinary passages not so. Albarran,[1] Guyon's first and very able assistant, has shown that the urine passed by patients who have absorbed large quantities of salol has no bactericidal power, and contains pathogenic microbes. Lavaux's conclusions, derived from experiments in washing the urethra, are not based upon bacteriological examinations, and therefore lack convincing value, as pointed out by Petit and Wasserman[2] in their study of urethral antisepsis. These gentlemen, at the instigation of Guyon, undertook some experiments in urethral antisepsis by the direct method, and inoculated bouillon tubes with mucus taken from the urethra after thorough irrigation with sterilized water, 4 per cent. boric acid, and 1 : 1000 nitrate of silver. In every instance the inoculated tubes showed numerous microörganisms at the end of a week. These gentlemen, therefore, concluded, from a laboratory standpoint, that irrigation as ordinarily practised is without reliable value, even if continued half an hour, in that it does not secure complete asepsis of the urethra.

Yet this conclusion need not dishearten us. Why should we expect to wash out all the germs from a canal so permeated with glandular ducts, each one capable of holding enough bacteria to poison an army. As well may one decry the value of the mercuric bichloride against the gonococcus, because it does not kill them all at a single application—a manifest impossibility, since they are protected in the depths of the tissues and in the glandular follicles.

But this article is not to detract from the value of the means that we have to render urethral and bladder surgery more safe. It is to suggest another, in the hope that there may be value in it.

In June last I went to a city near New York to take a large stone from the bladder of an old gentleman, and at the same time to remove an outstanding third lobe. His case was desperate. He had suffered long, and for four years he had been an invalid, spending most of the last year in bed, taking opium suppositories, and passing his catheter hourly sometimes, and again at longer intervals. He could not urinate at all without the catheter. I cut this patient above the pubes, and took out a stone as large as an egg and a prostatic third lobe as large as the last joint of the thumb. The bladder was thin-

[1] Ann. des Mal. des Org. Génito-urinaires, January, 1890.
[2] Ibid., July, 1891.

walled, corrugated, trabeculated, and sacculated. I put my finger into holes on each side which seemed like ureteral orifices, but did not stop to investigate closely. They could not have been orifices of the ureters, because these are closed even when the ducts are enormously dilated. His urine had been like gruel, full of albumin and all sorts of detritus. There was no question of there being dilated ureters, pyelitis, and more or less interstitial nephritis on both sides. The operation was done simply because it had to be done in compassion for the old man's sufferings. The outlook was desperate.

I thought, then, of trying diuretin, and telephoned for it before the patient recovered from his anesthetic, ordering 10 grains to be given at once, and frequently repeated. This patient got well. He had considerable nausea from morphine given hypodermatically, but no chill and no suppression, and his physician, Dr. Tieste, writes, on September 1st, that "he is able to hold his water from five to seven hours, and to pass it without a catheter, a thing that he has been unable to do for three years."

Since that time I have used diuretin in every case of urethral or bladder operation that has fallen under my hands. I give 60 grains of salol per day for forty-eight hours before operating, and commence diuretin on the day of the operation, giving it also in doses of 10 grains every four hours for forty-eight hours. I, of course, irrigate the bladder and urethra; I did this before, but my results have been better since using the diuretin. If this is a coincidence, time will demonstrate it; if not, it is proper that this Association should have an opportunity to experiment, and either verify diuretin as an adjuvant to urethral and bladder surgery, or prove its lack of value. I do not here assert that it has great value, or any, but I do state that it does no harm, and that since commencing to employ it, now less than three months, I have used it in every major operation that I have performed, and my assistant, Dr. Fuller, has used it twice, and in no instance has there been any urinary fever proper—that is, there never has been a chill or a suppression. The cases cover all ages from eighteen to eighty, with desperate complications, such as pyelitis, urine loaded with albumin and casts, diabetes, etc. Patients have had shock, fever sometimes, and various complications, but never chill or suppression. The number operated on is 13; not large, it is true, but it was in the summer season, and all were private patients. The time is too short for generalization, but when it is remembered that the cases were: Supra-pubic prostatectomy, 6; supra-pubic lithotomy (diabetes), 1; perineal section, 3; perineal section without guide, 2; litholapaxy, 1; mostly in old men with damaged kidneys, all of whom recovered without chill or any tendency to suppression, it is fair to imagine that the means used had something to do with it, and the diuretin is the only new drug. In three of the cases there was profound shock after the chloroform (which I now always use), but the kidneys acted all along.

Was it the diuretin that did the service? I do not know. Time must decide.

Diuretin being a new substance, I may briefly say that it is theobromine and salicylate of soda (a combination sometimes ascribed to Gram, of Copenhagen), a white powder of sweetish, saline, alkaline taste. E. Merck, of Darmstadt, first manufactured it at the instance of Prof. Riegel, of Giessen University, some time prior to 1890. It is soluble in hot water and in warm diluted alcohol. The same or a similar salt was first brought out in the *Apotheke Zeitung*, December 14, 1889, under the name of diuretin. This is believed to contain 50 per cent. of theobromine, and is soluble with heat in half its weight of water, remaining in solution on cooling. Theobromine is the alkaloid obtained from the seeds of theobroma cacao, and is also found in the kola nut. It is related to caffeine, the latter being the methyl derivative of theobromine.

Diuretin appears to be a free diuretic, seemingly pretty constant in its action. It does not irritate the stomach, bowels, or nerves, and does not depress a weak heart. Reports about it therapeutically vary, as is natural in the case of all new drugs, but it seems safe, and worthy of trial in order to see what it will do. The dose is 10 to 15 grains often repeated, to 90 or even 120 grains a day, given in powder or in pill form—preferably gelatin-coated pill, as the powder deteriorates on exposure. If it will prevent, or even moderate urinary fever, it is a valuable drug. I hope to report a more extended experience with it next year.

REPORT OF TWO CASES OF EPILEPSY, WITH ALBUMINURIA, MISTAKEN FOR UREMIC CONVULSIONS.[1]

By JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

It has happened to me twice in a comparatively short time to be consulted in two cases of convulsions, associated with albuminuria, which were supposed to be uremic, but which proved to be true epileptic fits. The albuminuria in each case was responsible for the diagnosis made. In one of these cases two well-trained physicians were misled for a considerable time, and I held a like opinion with them until, in the course of a more prolonged study of the case, the truth dawned upon me. The second case was not so misleading from the outset, and with the light of my first case was easily recognized.

[1] Read at the sixth annual meeting of the Association of American Physicians held at Washington, September, 1891.

The first patient was a married woman, aged fifty, who had had one child, a girl sixteen years old, at the time the case came under my notice. There was no sign of renal trouble during pregnancy, and no complication during or after labor. An aunt on the mother's side died of tuberculous phthisis, and an aunt on the father's side of rapid consumption. The patient had one brother who was a confirmed epileptic. When seventeen years old, Mrs. H. had cough and hemorrhages, said to be from the lungs, for which she was treated with cod-liver oil. They ceased, and no other allied symptoms presented themselves. A few years before the illness about to be considered, she spat blood several times, but as she was approaching her climacteric her brother, who was a medical man, was not alarmed. In 1885 she had a spell of simple dysuria, the first in her life, which also passed off without any untoward effect apparent at the time.

On Saturday, December 11, 1886, she was attacked with severe headache, accompanied by great nausea. The headache was such as she had never before experienced. It continued for three days, but gradually abated, and by the 15th had nearly disappeared. At 8 o'clock on the evening of this day, however, she had a severe convulsion, during which she bit her tongue. She had a second at 12 o'clock, a third at 2 o'clock, and a fourth at 4 o'clock in the morning. The convulsions were controlled by chloroform, used as seemed to be required.

The urine at this time was scanty, contained a small amount of albumin and some pus, but no tube-casts were found. The convulsions were regarded as uremic, and she was placed upon a milk diet.

I was consulted concerning her on January 20th following (1887), when the urine was first sent to me for examination. It was a pale-yellow fluid, with a sp. gr. of 1015, feebly acid; contained a mere trace of albumin, and a small white sediment composed of pus and vaginal epithelium. No casts were found. I did not see her, however, until February 2, 1887, with Dr. William Savery and Dr. John W. Lodge. She was in bed for greater convenience of examination, but had been up, and, indeed, had not the aspect of a sick woman. Since her attack on December 15th she had been on a milk diet. The urine examined at this time (February 2d) was 1010, again contained a trace of albumin, and in the course of examining six slides I found two hyaline casts and one granular cast.

She continued to improve in general health without incident until a day or two previous to the 12th of March, when she had another attack of headache, less severe than the first, but accompanied by dizziness and noise in the ears. These symptoms gave rise to some apprehension, but were not followed by anything more serious. The urine was again examined; at this time it had a sp. gr. of 1015, contained a very decided sediment of pus, fully $\frac{1}{15}$ its bulk; again there was a very small quantity of albumin, but slightly more than at the previous examinations, $\frac{1}{50}$ the bulk being noted. The increased albumin was reasonably explained by the increased amount of pus. In addition to the pus-cells there were a few columnar cells, but no casts were found.

In the latter part of July, Mrs. H. had a rather severe attack of diarrhea, in which I attended her, on account of the absence of her brother. It was ushered in by a sharp headache, and as this had been the forerunner of her first attack of convulsions some apprehension was again felt, and it was thought best not to check it too suddenly. No convulsion occurred, but after she had recovered, and was sitting up, her daughter described a sudden momentary unconsciousness, during which a fall was arrested by her opportune presence. This was on the 27th of August, 1887. An examination of the urine at this time discovered a sp. gr. of 1017, the same flocculent sediment composed of pus-cells and epithelium, a single undoubted hyaline cast, and the same small quantity of albumin.

On November 20th, she had a severe fit, on account of which I was called, but she had come out of it by the time I reached her, being still, however, somewhat dazed. I saw her several times in the course of a couple of days, but there was no recurrence of the fit for nearly a year (September 20, 1888), although there was what was called "a threatening" a few days earlier. Another fit occurred December 22, 1888, April 8, 1889, and again December 6, 1889.

In the latter part of June, 1890, Mrs. H.'s attention was attracted by the presence of blood in her urine, unattended at first by other symptoms. The hemorrhage continued until June 28th, when it had become quite copious. In my absence from the country, my friend, Dr. Horace Williams, was called. To the hematuria was added now severe pain over the region of the bladder and in the right flank. The urine, loaded with blood, became also very scanty, as small a twenty-four-hours' quantity as twelve ounces being recorded.

Just when the bloody urine was assuming a brownish tint, the blood becoming replaced by pus, she had a slight chill, about 6.30 on the morning of the 2d of July, and at 5 o'clock the next morning a terrific chill, the temperature running up to 104.8°. By evening of the same day the temperature had fallen to 100.6° F., and by the next morning was normal. All the symptoms then began to subside, and on the 9th of July she was sitting up. During the entire period of her serious illness there was no suggestion of a convulsion, while the ninety grains of potassium bromide which she had been taking daily for months had been discontinued, and at the end of ten days, when she was deemed thoroughly convalescent, she had a single epileptiform convulsion. About August 1st, she went to Wernersville, Pa., and while there, on August 18th, had a single typical convulsion, and two days later what the family called "a threatening," in which she lost consciousness for a few seconds only—analogous to other minor attacks referred to.

She, however, rapidly regained her health; and on examination of her urine by myself, September 23, 1890, it exhibited the same small sediment of pus and trace of albumin. Another examination in July revealed the same state of affairs. After the

bromide was recommenced in the summer of 1890, she continued taking thirty grains three times a day.

On the 16th of June of this year I was sent for to see Mrs. H., because of a suspected attack of the usual kind, although she seemed not to have lost consciousness. There was no sign of anything wrong when I reached her. She is now apparently in good health, but has a shrinking, gentle manner which seems to me more or less characteristic of epileptics.

The second patient alluded to, also a woman, Mrs. R., was forty-eight years old, and had four children. Her father died of apoplexy, and her mother of a tumor of the stomach. In childhood she had an attack of diphtheria, and was subject to sore-throat. Seventeen years ago, at the birth of her second child, there was albuminuria, but no other serious symptom, and the albumin soon disappeared from the urine. It, however, returned from time to time, but in the meantime a third child was born without albumin being discovered, and without other complication. No albuminuria was reported in her third pregnancy, nor in her fourth; but four months after the birth of her fourth and last child, and while in apparently perfect health, she had her first convulsion. This was eleven years ago. The fit was a very slight one, lasting but a few seconds; there was twitching and a smacking of lips, but she was scarcely unconscious. During the seven years that followed, she had about half a dozen more fits at odd intervals. In the four years subsequently she had none until January 1, 1890, when she had a very severe one, preceded by what she calls dizziness, possibly an aura. From that date to September 12th, when I first saw her, she had no convulsion, nor has she had any to date.

At the suggestion of Dr. Brush she called upon me in September, 1890, and I elicited the above history. She described most of the attacks as being very short, and as consisting largely of what she described as a peculiar sensation lasting not more than a minute, during which she could hear her own voice making imperfect efforts at speech. The inability to speak properly continued several minutes after consciousness returned.

Her object in consulting me was to determine the nature of these attacks, the more especially as a distinguished member of this Association, whom she consulted in 1880, said she had Bright's disease, and would not live more than two years, probably only one. Ten years later she consulted Dr. Bartholow, of Philadelphia, who said that the attacks were epileptic. This view was held also by Dr. Brush, who sent her to me for an opinion.

In September, 1890, the evening and morning urine were examined on two separate occasions by myself, and each time a trace of albumin was found, but no sediment of any significance. The twenty-four-hours' urine ranged from forty to fifty-four ounces.

Under the circumstances, I did not hesitate to declare the peculiar seizures to be epileptic, and that the albuminuria had nothing to do with them. With regard to the milder attacks, the question might indeed be raised as to whether they may not have been hysteroidal attacks, of which Dr. H. C. Wood says: "They seem to be very close to epilepsy, and also to hysteria." And, like these, their true character is to be determined by the history of the case and the occurrence of more severe attacks of undoubted epileptic character in the present instance. A recent letter from Mrs. R. informs me that she had none since the violent attack of January, 1890, although she had during the past winter the "dizzy turns" described.

In further illustration of the possibilities of the situation, my friend, Dr. J. Hendrie Lloyd, related to me lately his experience with a similar case. Toward bedtime one night he was sent for in great haste by the servants to see the head of a family with the ills of all the members of which he had supposed himself well acquainted. Responding promptly, he found the gentleman, who was past middle life, in terrific convulsions, which he at once concluded were uremic. No others of the family except the servants were at home, and he could obtain no information. One attack succeeded another at close intervals, during which the patient lay in a comatose or semi-comatose state. My friend was, however, able between two paroxysms to secure a specimen of urine. Hasty examination failed to discover albumin, but the constant association of contracted kidney with small and scarcely detectable albuminurias, only went to confirm his conclusion that he had to do with a case of uremic convulsions. He remained throughout the night. The patient's wife was expected early in the morning, and he dreaded to meet her because of the sad prognosis he felt forced to make to her. He, however, gravely informed her of what had transpired, and she replied nonchalantly that he had been having similar attacks for twenty-five years!

Is there any way of avoiding similar errors? So far as any peculiarity of the convulsions themselves is concerned, I believe not. Uremic convulsions differ in no way from epileptic convulsions. They are, in fact, typical epileptic convulsions, and exhibit the same varieties and degrees presented by such convulsions. In both, the tongue is lacerated, both exhibit a degree of violence at once alarming and revolting. On the other hand, both may be so mild as to be barely noticeable, and both may be followed by periods of stupor of longer or shorter duration, or by a sudden return to the natural state. But true uremic convulsions do not repeat themselves at intervals for months and even years at a time, and yet leave the patient apparently no worse for his or her experience. And if true epileptic convulsions happen to be accompanied by albuminuria, such albuminuria does not, as a rule, remain at a stand-

still or grow gradually less, but increases and is gradually associated with other phenomena of chronic Bright's disease, such as hypertrophy of the left ventricle, edema, visual derangements, headache, high vascular tension, dyspeptic symptoms. When a history is obtainable of previous attack, it will generally be found that there has been a harmlessness of consequences following the pure epileptic convulsion which does not belong to the uremic fit.

CONGENITAL CLUB-FOOT, WITH ABSENCE OF THE GREAT TOE AND CONTIGUOUS BONES OF THE RIGHT INSTEP.[1]

BY T. M. L. CHRYSTIE, M.D.,
OF NEW YORK.

THE case herewith reported is of interest by its bearing upon the causation of congenital talipes of the equino-varus variety, since there are absent the parts that are supposed to produce the varus deformity of the tarsal arch or instep. The twist or varus of congenital talipes is said to be due to the drawing of the inner side of the foot upward and backward toward the leg by the contraction of the two tibial muscles, the tendons of which passing respectively in front of and behind the inner malleolus are inserted at the inner margin of the sole of the foot; the tendon of the tibialis posticus being inserted at the inner and under surfaces of the scaphoid and internal cuneiform bones, and that of the tibialis anticus at the inner and under surfaces of the internal cuneiform bone and the base of the metatarsal bone of the great toe. In this case, these muscles, as well as the bones (except the scaphoid) affording them attachments, are absent, yet, as shown by the photographs, there is an otherwise typical case of the deformity, the correction of which had been unsuccessfully attempted by at least two skilled medical men during more than two years.

The child was brought February 14, 1891, aged two years and five months. He was carried, though I was told he could walk while wearing a shoe into which was incorporated a steel structure; but in a few hours the use of this made the apex of the varus too sore to be continued. The deformity of the foot attracted so much attention that the presence of only four toes was not usually noticed. The gastrocnemius was extremely and firmly contracted, but the front part of the foot was so twisted upward and inward that the patient, by placing the foot in advance and throwing back the knee, could rest his weight on the posterior part of the foot sufficient to steady his body, but not securely enough to stand or walk. His efforts in this direction were damaging the knee and upper part of the limb. Absence of the first row of the phalangeal bones and the first shaft of the metatarsus was made out at the first examination, but the absence of the internal cuneiform bone was discovered only after correcting the deformity.

Treatment was begun February 20, 1891, by partially correcting the tarsal deformity by hand, and placing the uncovered foot in a steel brace bearing on the inner side of the foot and leg, with a steel sole pressing the plantar surface of the metatarsus upward, the counter-pressure coming from a web strap passing over the tarsus aided by a compress; the leg was firmly grasped by a lacing of leather cut to include the external malleolus. The brace was removed twice in twenty-four hours to bathe the parts briefly in a solution of tannin and alcohol, but the foot was not allowed to lose any of its position. As the foot was gradually forced out of its deformity, corresponding changes were carefully made in the apparatus. In a week the brace was adjusted to remove the contraction of the gastrocnemius muscle, much of it being done by manual force at two or three sittings; and at the end of four weeks the foot was in correct position. There was no pain, discomfort or chafing, and after the first week the child walked nicely. The resistance in this case was as firm and unyielding as in another case of congenital talipes equino-varus, aged one year, under treatment at the same time, in which there had not been any arrest of development and the tibial muscles were present and strongly contracted. The foot in each case furnished a similar resistance to correction, and there was the same successful result in each. This demonstrated what has always seemed to me apparent, that the contraction of the tibial muscles is not the obstacle to be overcome and that their division is unnecessary.

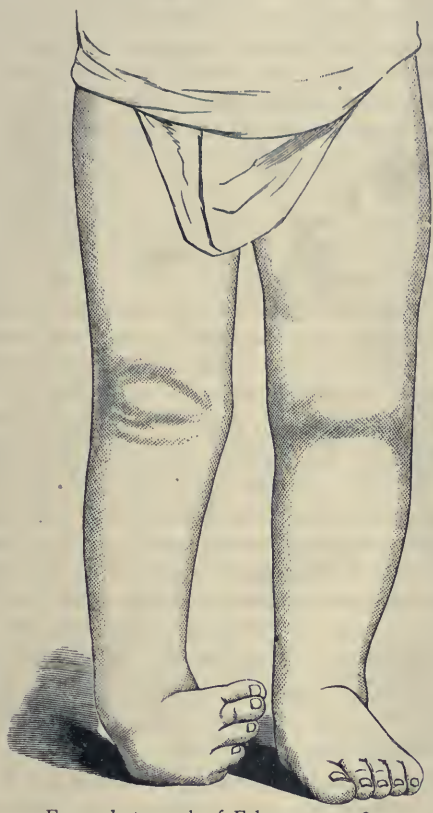
The child is active and intelligent, and in other respects well developed and healthy; he has two older brothers well formed and healthy, except a recent indirect hernia in the second boy. His mother is healthy and well formed, though small in height; her pregnancy was natural, except that she did more sewing than usual during the latter part of gestation; the birth was normal. The father, I am told, presents a deformity at the upper part of the spinal column, dwarfing him, but he is otherwise active and in good health, a dentist by occupation. The mother's uncle had hare-lip, and one of his children had extensive arrest of development of both upper and lower extremities, though in other respects healthy and still living.

The photographs show the foot before and after the correction of the deformity. The patient can extend and by the extensor communis digitorum flex his remnant of a foot, and has now use of foot and limb without any defect of gait. The right

[1] Read at the meeting of the American Orthopedic Association, held in Washington, September 22–25, 1891.

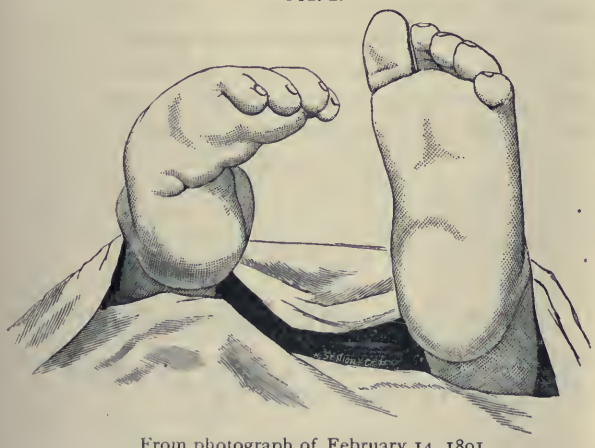
leg below the knee is three-quarters of an inch less in circumference than its mate, owing to the absence of five of the thirteen muscles of the leg. The absence of the great toe is responsible

Fig. 1.



From photograph of February 14, 1891.

Fig. 2.



From photograph of February 14, 1891.

for the absence of three, the peroneus longus, the extensor, and the flexor proprius pollicis; and the absence of the first shaft of the metatarsus and the internal cuneiform are responsible for the absence of the two tibial muscles. Measurements about the malleoli show six inches for both sides. The scaphoid bone is not fully formed, and since the removal of the deformity has not developed apace with the rest of the foot. The limbs are the same

Fig. 3.

From photograph taken September 12, 1891.

in length, but it remains to be seen if the right limb will grow at the same rate as its more favored mate. It now has a chance, though it has against it eighteen months of disability and injury from the deformity of the foot, the efforts to use the limb on so unsteady a base resulting in hyperextension and strain of the knee-joint, and an injury to the nutrition of the entire limb, from the glutei muscles down.

PRE-COLUMBIAN SYPHILIS.

By ALBERT S. ASHMEAD, M.D.,
of New York.

In view of the interest awakened in pre-Columbian matters by the approaching Fair in Chicago, the question of the history of syphilis in America is just now receiving a great deal of attention. Dr. James Nevins Hyde, in the *American Journal of the Medical Sciences*, discusses the question whether the North American Indians of pre-Columbian times left any evidences in their bones of syphilitic disease. Many—Dr. Shrady among them—think that we have been too ready to accept the compliment paid by the ancient continent to the new in crediting it with the origin of the disease. Dr. Hyde reports the results of some microscopical studies by Dr. Prudden, on two tibiæ from Colorado, which showed the presence of chronic formative ostitis and periostitis, which, as Dr. Shrady observes, might or might not be of syphilitic origin. They conclude that as yet the story has not been told by the bones.

Professor Brinton, the American paleontologist, thinks otherwise. In a letter that I am authorized to make use of, he says: "The origin of syphilis is still an open question. It seems to me probable that it existed time out of mind, in both the New and Old worlds, but assumed a peculiarly malignant form in Europe at the close of the fifteenth century. Certainly, in America, syphilis of the bony system existed before the discovery, as is shown by the relics in ancient graves." Again he says: "Whether it was peculiar to the American continent and was carried to Europe by the sailors of Columbus, etc., as has been argued, is a separate question. I am inclined to think that it really existed in both continents, but for reasons unknown abruptly assumed a malignant type in Europe at the close of the fifteenth century."

The researches of Mr. Gozo Tateno, the Japanese Minister to Mexico, have nothing to do with bones. In his opinion the Aztecs of Mexico and the Japanese belonged to the same race. The physical, and even the philologcal affinities, are extremely striking. I do not know how much importance ought to be attached to the fact that such simple words as "adobe" (sun-dried brick), "coa" (snake), and "huarache" (shoe), are both Japanese and Mexican. But the fact is certainly curious. It is to be hoped that Mr. Tateno will some day publish all the results of this very interesting investigation.[1]

Quatrefages also believes in the consanguinity of the pre-Columbian Americans and the Asiatics. The latter have, of course, been carried to our shores by the Japanese Black Stream. The Behring Straits might even have given passage to a Chinese invasion. It is an undoubted fact, which must corroborate this opinion, that America was known to the Chinese long before Columbus. They called it Fousang. We find in their books some very striking presentments of that very characteristic animal, the llama. The same books speak of Buddhistic efforts at proselytizing in Fousang in the fifth century. Buddhist symbols, representative of Asia, are found in pre-Columbian American art. The Japanese called the same country Fouso, and the same missions are mentioned in their literature.

Quatrefages might have strengthened his theory by showing some almost evident Japanese vestiges in old Peru—for instance, the belief that the rulers of the land, the Incas, were descended from the sun, while we know that the Japanese consider their country as the sun's cradle (Nippon); and the custom of burying the dead in a sitting posture. We owe to trustworthy travellers the interesting information that a Japanese dialect was spoken in certain early Californian colonies. Mr. Guillemin Taraire affirms it of a tribe of Santa Barbara; moreover, he says that the language of several others includes some Japanese and Chinese words. These are not the only philological facts of that kind of which we know. I may mention here that the Hon. John A. Bingham, who was our Minister in Japan for thirteen years, told me that he had found a great many similarities between American-Indian dialects—for instance, of Ohio—and the Japanese language. It must be remembered that Ohio was probably one of the most inhabited cantonments of the pre-Columbian population, for it is one of the places in which most of the remains left by the ancient mound-builders have been found. The word Ohio itself is, perhaps, Japanese "good-morning." Even as far east as Pennsylvania we discover philological affinities. Glen Onoko, near Mauch Chunk, was formerly called by the Indians Otaki. Both words, Onoko and Otaki, are Japanese, and mean "male" and "great waterfall." In Japan, when two waterfalls are situated close together, the great one is always called the male, the small one the female.

Here is another fact, not philological: The different kinds of Indian arrow-heads in the National Museum at Washington have been compared to those forms of arrow-heads that were used by the old Japanese. There is a striking correspondence. All the Indian types are represented in ancient Japan. Yet in no other case does a comparison of Japanese arrow-heads with those of other tribes show any remarkable degree of similarity.

Even if we had only such facts, each not so very strong, perhaps, but very numerous, we might think it highly probable that the American races were descendants of the East Asiatics. In that case it would be equally probable that syphilis existed in America many centuries before the advent of Columbus, for this disease without doubt was known in Japan as early as the seventh century at least. We have for the latter statement the authority of the "Ishinpo," a Japanese encyclopedia of Chinese medical works, 589–807 A. D., by the great Japanese professor of acupuncture, Tamba. There are other authorities no less weighty.

[1] Mr. Tateno is a native of Osaka, and speaks the dialect of Western Japan.

CLINICAL MEMORANDA.

A CASE OF MERCURY-POISONING BY AN ANTISEPTIC TABLET.

BY WILLIAM CLINTON SHEEHY, M.D.,
OF NEW BEDFORD, MASS.

M. V., a sailor, thirty-three years old, while at sea suffered from constipation, and was advised by a shipmate to "take a pill." He was unable to read English, and without advice he took from a bottle a white tablet, which afterward proved to be an antiseptic tablet con-

taining hydrarg. chlor. corros. 7.7. gr., amm. chlor. 7.3 gr.

On the evening of August 29th, three days afterward, I was called. His companion stated that he broke the pill with his teeth and washed it down with a small glass of water. About half an hour afterward, he was seized with vomiting. A sense of nausea with occasional vomiting, the vomitus sometimes containing blood, persisted for twenty-four hours. It was the appearance of blood that alarmed the captain and caused him to bring the boat to port. The bowels, which had moved but *once*, became the seat of much severe griping pain. The tongue, teeth and gums showed all the characteristic symptoms of violent mercurial poisoning, and the breath was very fetid.

The man had experienced a great deal of pain and burning in the esophagus, and had, therefore, taken no solid food. He had a violent headache, a temperature of 99⅘°, but a good pulse. I ordered potass. iod. gr. v, every four hours, and potass. chlor. gr. v, every four hours, given separately, and had the mouth washed every hour with a solution of potass. chlor. (gr. x to ℥j). On August 31st, he complained of some soreness and swelling about the submaxillary glands; but this had disappeared the next day. Under the potassium iodide, which I had increased to ten grains every four hours, he felt worse, but a full dose of magnesium sulphate caused a disappearance of the symptoms. Flaxseed tea was very gratifying to the patient, and under the continued use of potassium iodide, free purgation, and a milk diet, he did well.

I consider this case interesting because I believe that a good part of this strong bichloride solution must have been absorbed. The broken tablet was certainly in the stomach long enough to become dissolved. In this connection it is to be noted that there was neither purging nor eruption, results that usually follow the ingestion of large doses of mercury.

REMOVAL OF THE VERMIFORM APPENDIX FROM A CHILD TWENTY-TWO MONTHS OLD, FOR SUPPURATIVE APPENDICITIS; RECOVERY.

By J. E. SUMMERS, Jr., M.D.,
PROFESSOR OF SURGERY, OMAHA MEDICAL COLLEGE; SURGEON TO THE CLARKSON MEMORIAL AND IMMANUEL HOSPITALS, OMAHA.

I HAVE carefully searched the literature at my command for the report of a case of appendicitis, with removal of the appendix, in a young child, and finding none I feel justified in recording the following case, more especially since the tables of Matterstock and Fitz show the disease to be very rare before the third year. Indeed, according to Fenger (*Cyclopedia of the Diseases of Children*), the youngest case of appendicitis was in an infant seven weeks old. On post-mortem examination, there was found a diffuse peritonitis and "the appendix was dilated and filled with adherent, firm, solid, concrete-like fecal masses." No perforation was discovered. Silbermann saw a case of peritonitis the result of perityphlitis in a child in the late period of lactation. Matterstock mentions a case of perityphlitis in a seven months' old boy, and he and Fitz each report cases in children of twenty months.

Fitz found that out of 247 cases of the disease among children, 80 per cent. were in males and 20 per cent. in females. Matterstock, in 72 cases of children, found the disease in 51 males and 21 females; 70⅘ per cent. and 29⅕ per cent. respectively.

Thus we see that the disease commonly designated perityphlitis, usually having its starting-point in the vermiform appendix, an appendicitis, is almost unknown before the third year, and although not uncommon after that age in children, it occurs much more frequently among males than females.

On the morning of the 27th of July last I was requested to see a twenty-two months' old boy, with the view of performing an abdominal section for the relief of a supposed intestinal obstruction. The history of the case, as given by the attending physician, was as follows:

Four days previously he saw the child soon after it had been seized with what he judged to be an attack of colic. Visiting the child again after a few hours, the existence of a serious lesion was recognized; the pulse was very rapid and the temperature 104° F. There was marked abdominal distress, frequent vomiting, and the bowels were constipated. The child was just recovering from an attack of summer diarrhea. On the second day a consultant saw the case and diagnosticated some obstructive trouble about the head of the colon. Although the temperature had gone down, ranging from 100° F. to 101° F., the pulse was still proportionately too fast. The abdominal symptoms continued more or less pronounced, requiring opium. The bowels had been moved several times by enemas, the dejections containing much mucus. From the second to the fourth day, it had been impossible to obtain a movement of the bowels by enema, and also a cathartic, given by the father without the physician's direction, had failed to act. A small tumor situated in the right abdominal region had been recognized.

On the morning of the fourth day I saw the case for the first time. The pulse was 140, the temperature 101° F., the abdomen somewhat distended and painful, more especially over the region of a small tumor situated with its greater part above McBurney's line. There was no special point of tenderness. The tumor was evidently not adherent to the parietal peritoneum. The child had the general appearance of being very ill. I diagnosticated a suppurative appendicitis, and advised immediate abdominal section. The possibility of an intussusception was considered.

Everything being in readiness and the patient chloroformed, I made a digital exploration by the rectum, and finding nothing to aid the diagnosis, stepped into the bath-room to wash my hands, when upon returning I found that my rectal exploration, aided by the anesthetic, had accomplished what repeated injections failed to produce, a copious, natural movement of the bowels. The surprise of the father and others present, who had had obstruction of the bowels well impressed upon their minds, was so great that I had some difficulty in getting consent to proceed with the operation.

It was done, however, in the usual manner. The incision was made in the right linea semilunaris. The tumor, agglutinated intestines, and omentum were isolated from the general peritoneal cavity by the care-

ful packing of iodoform gauze between the parietal peritoneum and the intestines about the tumor. The omentum was then separated from the surface of the tumor and the intestines gently teased apart until the escape of the characteristic, stinking pus indicated the opening of an abscess. After several drams of pus had escaped, the separation of the intestines was continued until the appendix was recognized, when it was freed from its adhesions, brought up into the incision and tied off from its mesentery and close to the cecum by a double silk ligature, and then cut away. It was much enlarged, in part gangrenous, and contained three perforations. No foreign body could be discovered. The protective packing of gauze was removed and renewed. In addition to some of this same material, a drainage-tube was introduced in the region of the abscess. The usual dressings were applied, but no sutures. In twenty-four hours most of the gauze was removed, and the wound lightly packed. On the fourth day the patient was chloroformed, all gauze removed, and the wound closed by sutures, except its lower angle. The convalescence dated from the day of operation and was uneventful.

I have since operated successfully upon a boy eight years of age for a similar lesion. The appendix could not be recognized; otherwise the operation and after-treatment were practically identical with those in the case narrated.

STRANGULATION OF VAGINA THROUGH A RING-PESSARY.

BY FRANK W. THOMAS, M.D.,
OF PHILADELPHIA.

THE following case is reported to call attention to an unlooked-for danger in the use of certain forms of ring-pessaries.

Mrs. L., sixty-eight years old, was badly torn at her last confinement, and for the past sixteen years has suffered from complete procidentia uteri, to which condition, owing to extreme modesty, she had never called the attention of a physician. A chronic endometritis and ulcerated cervix finally led her to complain, and she was persuaded to seek medical aid. Examination revealed a perineum torn almost to the sphincter, the uterus and inverted vagina protruding from the vulva, the os dilated and ulcerated from friction, and a thick muco-purulent discharge flowing over the parts and excoriating the adjacent tissues. The patient refused operative aid, and a support, having an external attachment, was suggested. For many reasons the "Cutter" support (a ring one and a half inches in diameter, with a lateral stem) was selected. This gave great comfort for two or three days, when it became displaced and was replaced by a neighboring (untrained) nurse. An hour later the patient was suffering agony and I was summoned. The uterus and inverted vagina were again protruding and presented a swollen and purple appearance, with distended veins. The stem of the support was found between the arch of the pubes and the anterior inverted vaginal wall. With some difficulty the finger was guided along the stem and the ring was found to be surrounding and constricting the vaginal tissues at the fundus of the uterus, which had fallen through the lumen of the ring. Careful and diligent manipulation for half an hour failed to free the mass. Filing through the ring was tried in vain, and as a last resort, a pair of ordinary garden shears was brought into requisition, and the ring cut through at the stem and at the opposite side. The tissues were freed, the protruding mass replaced, antiseptic vaginal washes used, and the os supported on a McIntosh cup. Since this time (September 25, 1891) the patient has done well.

Senile atrophy of the uterus is the probable explanation of this rare accident, which might have proved so serious, but the occurrence should warn us of the necessity of taking into consideration the nature and size of all the pelvic contents before applying a support. If in a similar case I should need a like support, and in order to use cleansing douches I hesitated to apply the "cup," I should modify the "Cutter" by having a narrow (one-quarter inch) hard-rubber band extending across the lumen of the ring, which would prevent hernia and allow irrigation.

"THE PROTECTIVE" IN ANTISEPTIC DRESSINGS.

BY D. BENJAMIN, M.D.,
SURGEON TO COOPER HOSPITAL, CAMDEN, N. J.

WHAT is known as "the protective" in antiseptic dressings is a piece of silk very much like the common silk court-plaster, or isinglass-plaster, with this difference, that it is not so stiff, and is, or rather is supposed to be, sterilized.

The manner of using it is to carefully lay over the line of incision a strip sufficiently long to extend at least half an inch beyond each extremity and wide enough to extend at least a quarter of an inch beyond the sutures on each side of the wound. This constitutes the first part of the antiseptic dressing for the wound, and upon this the antiseptic gauze is placed; the antiseptic or absorbent cotton follows, and then the bandage. Some use a powder either on or under "the protective."

To obtain the best results in antiseptic surgery "*the protective*" *should never be used;* it is so impervious, especially if well applied, that instead of keeping the edges of the wound together it prevents the escape of the effusions and thus dams them up, causing pressure and separation of the edges of the wound. If "the protective" be left off the wound altogether, the antiseptic gauze absorbs the exuded fluids, keeping the wound nicely drained and dry.

Moreover, if there happen to be a few germs under "the protective" they readily multiply in the pent-up secretions, thus kindly protected from all the influences of the bichloride gauze, with its many absorbent layers laden with the germicidal mercury. My advice therefore is: *Do not use "the protective."*

Having sterilized the wound as completely as possible, after the sutures are cut and tied, apply the dry antiseptic powder, the gauze, the cotton and the bandage. Any "protective" placed between this dressing and the flesh, if it does anything, destroys or injures the usefulness of other dressings.

The Bacillus of Leprosy.—It is announced that Dr. Kantback, a member of the Indian Leprosy Commission, has finally succeeded in cultivating the bacillus of leprosy in artificial media.

HOSPITAL NOTE.

STITES'S TEST FOR CARCINOMA.

By JOHN H. BRINTON, M.D.,
PROFESSOR OF THE PRACTICE OF SURGERY AND OF CLINICAL SURGERY IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

On October 17th, at the surgical clinic, I removed for atrophic scirrhus the right breast of a female, aged sixty-one. In the presence of the class the tumor was immediately subjected by Dr. W. M. L. Coplin to the test of Mr. H. J. Stites, of Edinburgh. The method of examination was that furnished me by Professor Chiene, of Edinburgh, which I give in his own words:

1. Excise the mamma.
2. Wash thoroughly in water to remove blood.
3. Place in a 5 per cent. solution of nitric acid (B. P.) for ten minutes.
4. Wash in cold water for five minutes.

By the time these procedures are executed the axilla is cleaned out and the vessels tied. The mamma is now examined; the carcinomatous structure appears a dull white, like the eye of a boiled fish, the healthy tissue translucent. When any such reaction is seen additional tissue should be removed at the corresponding point.

In removing the carcinomatous breast, Professor Chiene directs that its relations to the circumferential tissues should be marked by the knife, so that after the test has been applied to the mass excised the situation of any outlying, unremoved diseased areas can be fixed.

In the case operated upon the foregoing directions were carefully followed by Dr. Coplin, who demonstrated to the class that the infected tissue became of the characteristic "dull white," resembling egg-albumen, while the uninfected tissue appeared translucent and gelatinoid, affording a striking contrast to the carcinomatous structures. The reaction in the axillary glands seemed even more marked than that in the breast; it therefore would, perhaps, be well always to retain one gland for comparison with those treated with the acid.

The test described by the distinguished Scottish surgeon as devised by his assistant, Mr. Stites, appears to be a most perfect one. It is to be hoped that future trial will show that it can be depended upon, and that it can really be accepted as a gauge of the thoroughness and sufficiency of removal of carcinomata, not only of the mamma, but also of other parts.

CURRENT LITERATURE.

CURETTING THE UTERUS IN PUERPERAL FEVER.

Heinrich Fritsch maintains that the view that puerperal fever depends upon the invasion of the uterus by cocci leads to two indications: to prevent the entrance of the germs—prophylaxis; and to remove or render harmless such cocci as may have gained entrance.

If it could be known just when the germs had gained entrance into the genital passages, immediate or at least early washing out, cauterization and cleansing would be of service; just as the same procedures bring about recovery in operations for appendicitis and pyosalpinx, when rupture of the tube has taken place. When it is too late to obtain good results from irrigation, good may be accomplished by curetting the uterus. Such a mode of treatment would seem logically justifiable if puerperal fever be divided into pyemic, septicemic and sapremic. In the latter, septic processes are taking place in the uterus, with the presence of saprophytes and the ptomaïnes formed by them, the entrance of which into the circulation occasions fever. There is no doubt that the complete removal of the septic contents of the uterus in such a case must insure recovery. Fritsch admits that curetting is not especially dangerous, and states that it is not very painful. He thinks that there is little danger of perforation of the uterus, and seems to prefer a large, broad, dull curette. In the first few days after delivery, the uterus is usually firm and hard. Exceptionally, however, it may be soft and easily perforated. There are individual differences in this respect, and there are also local differences in the same uterus. Generally the uterus is more easily perforated later, in the fourth week.

In spite of the ease and harmlessness of curetting, Fritsch advises against it, because, at the beginning, sapremic puerperal fever is not to be differentiated from infection with streptococci. He has seen a large number of fatal cases of infection in which the fever set in between the fifth or eighth day, or later, and in which the mind was clear for days.

Again, in curetting, the true seat of the disease in the parametrium is not attacked. Infection begins in the cervix. When contraction of the uterus has taken place, the poison is beyond the reach of irrigation. The cocci enter through wounds in the cervix. So long as the cocci remain in the cervix they do little harm; interference may cause their dissemination and thus lead to the development of puerperal fever. In mild cases cleansing does good; so may also strong cauterization with iodine. Vigorous contraction of the uterus is helpful.

If fragments of placenta are adherent they should be removed with the curette, although Fritsch cites instances in which they seem to have occasioned no disturbance.—*Deutsche med. Wochenschrift*, No. 16, 1891.

DILATATION OF THE STOMACH FOLLOWING STENOSIS OF THE DUODENUM.

Hochhaus (*Berliner klin. Wochenschr.*, No. 17, 1891) concedes that it is easy to diagnosticate pronounced dilatation of the stomach, but maintains that it is often difficult to determine the causative factors. Among the latter are chronic gastric catarrh, atony of the muscular coat, obstruction at the pylorus and constriction of the duodenum. In some cases of narrowing of the duodenum large quantities of bilious matter are vomited.

In a case of narrowing of the jejunum, changes in the chemical reactions of the gastric fluids were noted. Sometimes, after a test-meal, the filtered gastric contents contained free hydrochloric acid and possessed normal digestive power; at other times hydrochloric acid was absent from the admixture of bile and the alkaline intestinal juice. Moreover, in spite of thorough washing-out of the stomach in the evening, profuse

vomiting nevertheless occurred during the night, due, no doubt, to regurgitation from the duodenum into the stomach.

Hochhaus reports three cases of obstruction of the small intestine. In the first, in a woman, sixty-seven years old, the main symptoms were eructations, flatulence, a feeling of tension in the epigastric region, and vomiting. The vomiting occurred at first two or three times a week, several hours after meals, but subsequently it took place in the late hours of the evening. A loud succussion sound could be heard over the stomach, with other evidences of dilatation. At times free hydrochloric acid could be found in the contents of the stomach; at other times the acid was wanting. The patient ultimately died of inanition. At the autopsy a tight stricture of the duodenum, just beyond the pylorus, was found, together with other evidences of ulceration resulting from the presence of biliary calculi.

The second case was in a man, sixty-seven years old, with vomiting of large quantities of a dark-greenish fluid, in which free hydrochloric acid was sometimes present and sometimes absent. The beginning of the jejunum was occluded by a colossal gall-stone. There were large scars in and a fistulous communication between the duodenum and gall-bladder.

In the third case, in a man thirty-four years old, with epigastric pains, eructations, and profuse vomiting of brownish masses, in which free hydrochloric acid was almost constantly present, a small carcinoma of the pylorus was found. The duodenum was additionally constricted at its lower part by cicatricial bands extending from the cystic duct.

Hochhaus believes that the chief diagnostic points of dilatation of the stomach following stenosis of the duodenum are:

1. The presence of a large quantity of bile in the stomach.
2. The variability in the presence of free hydrochloric acid and in the digestive power of the gastric juice.
3. Profuse vomiting in spite of careful washing-out of the stomach.
4. A history of disease of the biliary passages.

MEDICAL PROGRESS.

Antipyrine in the Treatment of Chorea.—LEROUX (*La Semaine Médicale*, August 12, 1891) obtained favorable results in forty-one of sixty cases of chorea treated with antipyrine. In the favorable cases, the disease terminated on an average at the end of forty-five days—the usual duration of chorea being sixty-six days. In nineteen cases, the results were not favorable, either because the disease proved refractory to antipyrine or was prolonged as post-choreic tic, or because the treatment was pursued irregularly, or was suspended on account of an intercurrent affection or of an intolerance of the remedy. Recurrences and relapses were, however, frequent, notwithstanding the continuance of the treatment. Forty-five grains (daily) constituted the minimum dose from which favorable results were obtained. In some instances, it was necessary to administer from sixty to seventy-five, and even ninety grains. The treatment was begun with from fifteen to thirty grains; for children of from eight to ten years, the dose was speedily increased to from sixty to seventy-five grains; for children of from ten to twelve, to from seventy-five to ninety grains. Some cases yielded at once to doses of from forty-five to sixty grains; but if at the end of from eight to ten days there was no change, the dose was increased in accordance with the age of the child. If, finally, at the end of a month doses of from seventy-five to ninety grains brought about no notable amelioration, no more was hoped for from its administration. Notwithstanding the prolonged administration of large doses of antipyrine, not a single grave accident occurred.

Incised Wound of the Femoral Vessels.—KRÖNLEIN (*Corresp.-blatt f. Schweizer Aerzte*, August 15, 1891) reported to the Society of Physicians of Zurich the case of a butcher, twenty-one years old, who had received an incised wound in the middle of the anterior surface of the right thigh, losing considerable blood before an Esmarch bandage was applied. The extremity became greatly swollen and the patient was anemic, almost pulseless, and excited. Without anesthesia, an incision was made at the site of injury and great masses of coagula removed. The femoral artery and vein were found severed; they were ligated with silk. Drainage was provided for; the limb was elevated, and a bandage was applied. In the course of twenty-four hours, fever developed; the wound became discolored and purulent; the limb was greatly swollen; the foot and leg became cyanotic. The sutures were removed. The bandages were changed twice daily, and the wound was irrigated with a solution of corrosive sublimate. Improvement gradually took place. Gangrene of the foot set in, a line of demarcation forming at the tarso-metatarsal line. Three weeks after the accident the condition of the patient was good; the temperature was almost normal, and the wound was quite clean.

Echinococcus in Joints.—FISCHER (*Deutsche Zeitschr. für Chirurgie*, Nos. 1 and 2, 1891) has reported the case of a man, forty-four years old, in which, following an injury of the lower end of the left thigh, great pain, swelling and fluctuation appeared at the knee-joint. An incision above and internal to the patella evacuated a considerable quantity of a thin, nearly clear fluid, with about a dozen echinococcus cysts. Swelling and fluctuation, however, returned. The knee-joint was then exposed and many echinococcus cysts with serous fluid were evacuated. The reddened synovial membrane and the suspected parts of the capsule of the joint were extirpated, the lower end of the femur thoroughly cleansed. Complete recovery ensued, with scarcely any impairment of the usefulness of the joint.

Anticylic Acid: a New Antipyretic.—MÜLLER (*Corresp.-blatt f. Schweizer Aerzte*, August 15, 1891), of Tokio, recommends anticylic acid as an active antipyretic. It is a white, fragrant powder, with a refreshing, acid taste, readily soluble in water, alcohol and glycerin, and is non-toxic. In a solution of 1 : 10,000 it is destructive of even the most resistant organisms. The solutions are clear and do not injure instruments. Administered internally in doses of gr. $\frac{1}{100}$, anticylic acid proved exceedingly useful in cases of pneumonia, typhoid fever and articular rheumatism.

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SATURDAY, OCTOBER 31, 1891.

THE DISPOSAL OF LEPERS.

Within the past few years a considerable number of cases of leprosy, mostly subjects of foreign governments, have been brought to public notice in various parts of the country. Quite recently four cases have been discovered in Philadelphia alone. Two, by a fortunate combination of circumstances, were safely returned to their homes in South America; one is now in an adjoining county, and one is isolated in the Municipal Hospital. What to do with these unfortunate creatures is a subject for thoughtful consideration. The law prohibiting the admission of lepers into this country may be easily evaded when the disease is concealed, or not sufficiently developed to be readily detected. When in the country, the difficulty of returning the subjects of this malady to their native places is almost insurmountable. It remains, therefore, to devise a plan for the proper detention and care of lepers on our own soil.

It is no longer a disputed point that lepers should be isolated, and this isolation should be adapted to the peculiar needs of the patients suffering from this much-dreaded disease. While in a degree deprived of their liberty, the dictates of humanity repel the idea of isolation so absolute as to amount to imprisonment at solitary confinement. It therefore becomes necessary to provide stations for the special management and humane treatment of the subjects of this malady. Municipalities, or even States, are unequal to the task, for the reason that the expense would be excessive without apparent, corresponding advantages. An undue multiplication of such places, when only occasional necessity for their use exists, would make such a scheme impracticable. And yet, when the demand exists, the want of a local station is severely felt. Nor does it seem right that any municipality should be burdened with the expense, when the sufferers are almost invariably foreigners who have no permanent domicile, but move about from place to place as circumstances determine.

It would seem judicious and eminently proper that the National Government should take this subject in hand, and provide one or more well-selected stations, where all lepers could be sent under such regulations as would avoid any conflict with State prerogatives. Congress is soon to assemble, and if the representative medical societies and the Marine-Hospital Service, which is especially interested in the subject, would formulate the legislation necessary to meet the needs of the country, and follow up the first step by persistent effort and intelligent agitation of the subject, the solution of this question might be accomplished before another year passes.

METHYLENE-BLUE IN THE TREATMENT OF MALARIA.

In the *Berliner klinische Wochenschrift*, No. 39, 1891, Guttmann and Ehrlich, of the Moabit Hospital at Berlin, present an account of some very interesting and apparently valuable observations that they have recently made upon the therapeutics of malarial fever. In view of the fact that patients suffering from severe and prolonged attacks of this disease frequently acquire such a tolerance to the action of quinine that its therapeutic value is very much diminished, and at times even quite lost, these studies of Guttmann and Ehrlich will be of particular importance. They have tested the action of medicinal methylene-blue in this affection, and in two cases, one of quotidian, the other of tertian malarial fever, seem to have shown that the drug possesses curative properties. For some time past, chemists have been endeavoring to prepare synthetically some compound of the nature of quinine that may be substituted for it, but with only partial success. The behavior of the plasmodium malariæ when subjected to the action of methylene-

blue outside of the body in blood freshly drawn from malarial patients suggested its employment in this disease.

GUTTMANN and EHRLICH employed the drug internally, in doses of 0.1 gram (1.5 grains) five times daily. In the tertian form of the fever the interval between the doses was three hours, in the quotidian it was one hour. In the latter case its administration was begun about from ten to twelve hours before the appearance of the fever. The quantity administered daily should not exceed 0.5 gram (7.5 grains) and this should be continued for from eight to ten days after the disappearance of the fever.

The only unpleasant reaction that accompanies the use of the drug is a temporary irritation of the bladder, which rapidly passes away with the use of small doses of powdered nutmeg. The quantity of urine passed daily is also slightly increased. As yet, albumin has not been observed to be an accompaniment of this condition, though GUTTMANN and EHRLICH recommend that during the administration of the drug the urine should be carefully tested for albumin.

The urine passed during the treatment is seen to be of a bright-blue color. The intestinal evacuations, on the contrary, when passed, show no evidence of the presence of the drug, because of its presence as the colorless reduction-product, but upon exposure for a time to the oxidizing action of the air they too take on the characteristic blue tint. The prophylactic virtues of this compound have not, as yet, been determined. GUTTMANN and EHRLICH suggest the probable beneficial action of methylene-blue combined with quinine in the treatment of tropical malarial fevers.

The form in which the drug is to be employed is the powdered, chemically pure, medicinal methylene-blue. It is given in capsule. Owing to the scarcity of malarial fever in and about Berlin the number of cases upon which the drug has been tried is small, but the evidence presented by these cases is of such a nature as to point to this compound as a valuable addition to the list of agents that may be used in the treatment of malaria.

THE CHEMISTRY OF THE SMALL INTESTINE IN MAN.

IN their studies upon the chemical processes in the small intestine of man, MACFADYEN, NENCKI, and SIEBER[1] arrived at results that point to the error of a number of statements which are commonly made in regard to this subject.

They found that the acid chyme in passing from the stomach into the small intestine did not become alkaline, but continued of an acid reaction until it had passed through the ileo-cecal valve. As a result of this acid reaction, a decomposition of proteids by bacteria does not take place, or, at most, takes place inconstantly and to a hardly perceptible degree; and not only that, but the action of the pancreatic juice on proteids is weakened by the acid reaction of the intestinal contents. The products so easily obtained outside the body by the action of trypsin on proteids (leucin and tyrosin) were *not* to be found in the small intestine. Further, the decomposition of the food-mass prior to its passage through the ileo-cecal valve is confined to the carbohydrates. The products formed by the bacteria from the sugar in the small intestine are the two lactic acids, acetic acid, succinic acid, carbonic acid, hydrogen, and ethyl-alcohol. Their ash-analyses proved that an important function of the mucosa of the small intestine is to constantly supply alkaline carbonates for the purpose of neutralizing the acids produced by the fermentation of the sugar.

They do not consider the fermentations produced by the bacteria in the small intestine as necessary for the maintenance of our life. It is much more to be regarded as a loss that a portion of the dextrose formed by the pancreatic enzyme out of starch is not absorbed, but serves as nutriment for the parisitic bacteria of the digestive tract.

It is in the large intestine that the contents of the alimentary tract take on an alkaline reaction, and it is also here that the first evidences of putrefactive decomposition are seen. The products of decomposition of the proteids of the food as found in the large intestine are chiefly indol, skatol, phenol, lactic acid, volatile fatty acids, aromatic acids, organic bases, and ammonia; the gases are carbonic acid, hydrogen, methan, sulphuretted hydrogen, and methylmercaptan. It is easy to see that none of these products are food-stuffs.

The general surveys made of the bacterial forms present in the small intestine under normal and healthy conditions show that these vary even with slight changes in diet, or with the way in which it is

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[1] Journal of Anatomy and Physiology, vol. xxv., 1891.

prepared. There seem to be no bacterial forms that are especially bound to and constantly to be found in the small intestine, as is seen to be the case with the oral cavity or with the colon. One characteristic mark, however, for the bacteria of the small intestine is this: that by preference, so to speak, they decompose carbohydrates and not proteids.

The proteids are decomposed in man in the large intestine, with the formation of the products that characterize putrefaction.

The case upon which these studies were made was particularly favorable for the purpose. It was a woman in whom an anus præternaturalis had been established at the extremity of the small intestine, just before it joins the cecum, so that the food-mass could be collected and studied after it had passed the entire length of the small intestine, and before it passed through the ileo-cecal valve.

During six months the patient lived with her large intestine completely cut off from the digestive process. During that time she gained in weight, and, from inspection of her urine, there was no interruption in the exchange of nitrogen as evidenced by the daily amount of urea excreted.

At the end of this time the small and large intestines were united, and the patient made a rapid recovery. The first solid stool was passed per rectum on the ninth day subsequently to operation.

REPORT OF THE NEW JERSEY STATE BOARD OF MEDICAL EXAMINERS.

We regret that we cannot publish in full the First Annual Report of the New Jersey State Board of Medical Examiners. The wretched conditions of medical or quackery practice under the old order of things are brought into sharp contrast with the ordering of such affairs as is promised and has been partly accomplished under the wiser administration of the new law that went into effect July 4, 1890.

The Board met and organized at Trenton, September 2, 1890. Since then eleven meetings of the Board have been held and 101 candidates examined. Of these, 82 were licensed to practise medicine in the State, 16 were rejected, and 3 licenses were issued in the preliminary branches. The examination papers are voted upon by the different examiners without personal knowledge of the writers. The questions are practical, and designed to test a fair degree of medical knowledge and intellectual ability. Previously to the year 1890 there was an average annual "registration" of about 300 so-called physicians. Comparing this number with the number of licentiates passed by the Board—82—it is readily seen that the new law operates by exclusion rather than by rejection. "Men who do not feel competent to pass our examinations find a convenient opening for themselves in the States where there is no medical law, *e. g.*, Massachusetts and Connecticut. Thus in Minnesota, where a similar law has been in operation since 1883, the ratio of physicians to the population has decreased over one-half during seven years—it being over 12 per cent. in 1883, and only 6 per cent. in 1890." This is a convincing argument, and must make the self-respecting physicians of Massachusetts and Connecticut blush for the condition of their local concerns. The law is perhaps the best that could at the time be passed, but can only be considered as a kind of stop-gap—the first attempt to fill the break in the levee. By its provisions the Board is a "mixed" one, five of its nine members being physicians, whilst three are "homeopaths," and one is an "eclectic."

INJUSTICE TO AMERICAN MEDICAL AUTHORS.

The question of the publication of contributions read at medical societies in other periodicals than the late-appearing Transactions or society's journal has an important aspect that is presented in a letter from our Paris correspondent contained in the current number of The Medical News. American medicine is plainly put at a disadvantage by the rules against such publication now enforced by many of our societies. It has become a matter of repeated remark that articles published only in the society Transactions, from obvious reasons are not abstracted or re-reported by European journals. The wrong even proceeds to their frequent exclusion from the *Index Medicus* and from the various annuals, epitomes, or other serial *résumés* of medical literature published over the world. It is said that the actual circulation of some of the Transactions or authorized society reports does not exceed fifty copies. Writers who have anything of importance to communicate to their professional brethren will scarcely submit longer to such an absurd restriction. The loss is a common one both to the author and to medicine generally, but to American medicine in particular.

SOCIETY PROCEEDINGS.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

(Continued from p. 497.)

SECOND DAY—SEPTEMBER 25TH.

DR. J. H. KELLOGG, of Battle Creek, Mich., read a paper entitled "Summary of My Personal Experience with Electrolysis in the Treatment of Fibroid Tumors," covering the results obtained in sixty cases. Of these, four were not treated sufficiently long to give the treatment a fair trial. Nine cases, one of which was a soft myoma, were made worse, or not much benefited. In five cases the tumor was not diminished in size, but other symptoms were considerably relieved. In eleven cases the tumor was not diminished, but the other symptoms, pain, weight, etc., entirely disappeared. In seventeen cases, the tumor was considerably diminished and the patient restored to good health. In fourteen cases the tumor disappeared entirely or became barely perceptible.

Of thirty-two interstitial tumors, the tumor was, in nine cases, diminished in size and other symptoms were removed. In six cases the tumor was not diminished in size, but the other symptoms disappeared. In nine cases the tumor was not diminished in size, but the other symptoms were in part relieved. In the fourteen cases that comprised all of the cases completely cured, both the tumor and the symptoms disappeared.

Of nine cases of sub-peritoneal growths, four were not benefited or were made worse; in one case there was slight benefit; in two, other symptoms were relieved but the tumor was not reduced in size; and in two the tumor was reduced in size and other symptoms were wholly relieved.

Of fifteen cases in which the tumor was both sub-peritoneal and interstitial, in five the treatment completely failed; one was slightly benefited; four were relieved of symptoms without reduction of the tumor; and in five there was reduction of the tumor and relief of other symptoms.

It thus appears that the cases of fibroids most benefited by electrolysis are those in which the growths are interstitial. Interstitial and sub-peritoneal growths are not benefited in the same degree. Sub-peritoneal tumors are the least susceptible of benefit. Sub-mucous fibroids are the most amenable to treatment, but of this class no well-defined cases had come under observation.

Of the fourteen cases in which no material results were accomplished, 78.7 per cent. were under forty, and 42.7 per cent. did not exceed thirty-five. In the cases of fibroid tumor in which other symptoms were cured, but in which the tumor was not diminished in size, the average age was 43.7 years. In cases in which the tumor was considerably diminished and the patient restored to good health, the average age was 40 years. In the fourteen cases in which the tumor entirely disappeared or became barely perceptible, the average age was 37.9 years.

There are, unquestionably, cases of fibroids that may be satisfactorily treated by electrolysis, and there are other cases that are fit subjects for the surgeon. There is still another class in which the patient herself or special circumstances must decide the mode of treatment that shall be adopted.

Electrolysis may be properly employed, and with expectation of success—1. In cases of small or moderate-sized tumors. 2. In interstitial growths of any size. 3. For the relief of hemorrhage and pain in any class of tumors. 4. As a means of expediting the climacteric change in any class of cases in which the application is well borne.

Cases should be subjected to surgical treatment, either removal of the appendages or hysterectomy—1. In cases of very large tumors, which have resisted the application of electrolysis for a reasonable length of time, and in which there is an uncontrolled hemorrhagic tendency. The hard multinodular fibroids are most likely to be benefited by this operation. 2. In cases of suppurating tubes, or in a seriously-diseased condition of the appendages. 3. Hysterectomy is the only remedy in cases of soft edematous myomata.

Of hysterectomy, ovariotomy, and electrolysis, it must be conceded that electrolysis is the least formidable operation. To obtain good results from electrolysis it is necessary to observe the most scrupulous care, not only in the application of the electrical current, but in the after-management of the patient. When, after applications of from 100 to 300 milliampères of current, gynecologists send patients to their homes in the street cars, in carriages, or in railway trains, distances of from two to twenty miles, it must not be a matter of surprise that now and then bad results are experienced. Patients should be sent to bed for twenty-four hours after each application of the current. Another cause of failure in the employment of electrolysis is neglect to use such other means as are known to be serviceable in the management of cases. It is not the duty of the surgeon to neglect to employ for his patient whatever remedy he believes may be beneficial, simply for the purpose of enabling him to differentiate more exactly the results of his therapeutic efforts.

The hygiene of the patient, and all measures calculated to improve the general health, must receive careful attention.

Dr. Kellogg expressed the belief that in cases of metrorrhagia the chief curative action of the current resides in its cauterizing effect upon the endometrium. Electrolysis accomplishes the same results as does curetting, not so rapidly, but more efficiently; its action penetrates the uterine tissues according to the strength and the duration of the application.

Dr. Kellogg stated it as his conviction that the current acts chiefly through its polar rather than by any subtle interpolar action. Interpolar action of the current must, necessarily, be transitory, whereas the destruction of tissue occasioned by the cauterizing action of the positive pole is tangible, and efficient and permanent in character, and as a result of which bloodvessels are plugged by coagulation, and afterward permanently closed by cicatrization, so that the nutrition of the morbid growth is materially lessened. Observation has demonstrated that a tumor, to be benefited by electrolysis, must be of such a nature and so located, as to be

susceptible to impressions upon its vascular supply, such as those described.

Dr. H. E. Hayd, of Buffalo, N. Y., reported "Two Cases of Fibroids in which Electricity Ceased to Control Hemorrhage after a Time, Although Eminently Satisfactory At First," admirably illustrating how dangerous and fatal hemorrhages may be controlled by positive galvanism after many other forms of treatment have consecutively failed. They demonstrated also the possibility of electrical satiety, a condition in which, after long and continuous electrical applications, symptoms at first relieved are provoked and aggravated. The cases also showed how after electrical applications simple measures acted favorably, when previously they had no salutary influence. Moreover they impress upon the surgeon's mind the necessity of expectant treatment in women at the menopause, and a frequent recourse to various medicaments, which may at one time fail, but after a certain period, and after the influence of other treatment, be of signal service.

Dr. Goelet stated that he could not agree with Dr. Hayd that there is such a condition as a patient becoming satiated with electricity. The cavity of the uterus is much larger than the cervical canal, and to produce a caustic action upon the endometrium the electrode must be large enough to be in contact with the entire uterine surface.

Another point is that in almost all cases of fibroid there exists endometritis, and this means catarrhal discharge, which probably prevents the action upon the diseased surface. In such a case the discharge must be gotten rid of by dilatation and drainage; in some cases it is necessary to apply the negative current to dissolve the secretions so as to permit of better contact with the diseased surface. In sensitive patients the current must not be too strong: 75 milliampères will not ordinarily cause hemorrhage. It is sometimes well to administer a mild anesthetic, preferably chloroform, for a few minutes. It is not wise too continue the application of electricity too long; if the application is made in three stages of three minutes each, or nine minutes altogether, using a mild anesthetic, a strength of from 250 to 300 milliampères can be employed; the agent must be pushed to accomplish success and not failure.

In some cases the cavity of the uterus should first be curretted so that the electrode can come in contact with the diseased surface and produce an eschar.

Dr. Goelet stated that a failure to control uterine hemorrhage by means of electricity is often dependent upon the application being too brief to produce cauterization.

Dr. Morton propounded the query, How much of the electrical action is due to the chemical products of the positive pole, and how much is due to the galvanic action pure and simple? He related a case in which persistent menorrhagia was controlled by the intra-vaginal application of a clay-ball electrode, a large growth in the groin simultaneously disappearing.

Dr. Cleaves stated that he had controlled the metrorrhagia in a case of irregular menstruation by two intra-vaginal applications of static electricity, which were given because it was not convenient to apply the galvanic current, menstruation becoming regular.

Dr. Morton added that it has been experimentally demonstrated that the negative electrode introduced into the uterus of a rabbit would cause a profuse flow of fluid from the uterus, and by reversing the poles the flow ceased. The effect is explained as one of kataphoresis—that is, the fluids pass from the anode to the kathode in a manner analogous to the occurrence of osmosis. To obtain the full effects of kataphoresis in the treatment of disease—in other words, to accumulate liquids at the negative pole—it is necessary to continue the treatment for some time.

Dr. Massey expressed a warning word against the too frequent introduction of electrodes into the uterus. The uterus should not be invaded by an electrode, or any other body that causes an equal degree of local disturbance, oftener than every five days at most; seven days constitute a better interval. He commended thoroughness of application. In causing the arrest of hemorrhage two actions are obtained from electricity: one, the constringent effect upon the uterine tissue—this is the only action obtained, unless destructive currents are used; the other consists in the destruction or cauterization of the mucous membrane, which is followed by cicatrization.

Dr. Massey emphasized the necessity for rest and rational treatment during the time of intra-uterine applications of electricity. The galvanic effect in controlling uterine hemorrhage simply induces contraction of the organ; with a sufficient current myomata can be affected similarly at the positive pole, with the employment of a platinum curette, in lessening hemorrhage.

Dr. Reading stated that in his experience the hemorrhages in question are due to a too frequent application of the current. In a case of large fibroid, extending above the umbilicus, in which menstruation was excessive both in quantity and duration, and treatment was applied two or three times a week for three months, menstruation recurred every two weeks, being quite profuse, and lasting from seven to ten days. After diminishing the number of applications to one a week, improvement immediately took place. In a second case of hemorrhage treated with a positive intra-uterine electrode two or three times a week, even after the stoppage of the hemorrhage, there was a recurrence of the hemorrhage; and upon diminishing the frequency of the applications, and substituting the negative pole for the positive, there was no further trouble.

Dr. G. Betton Massey, of Philadelphia, read a paper entitled "Electro-puncture: Its Most Useful Modifications, and Its Value in the Treatment of Fibroid Tumors," which is to appear in a subsequent number of The Medical News.

Dr. Goelet stated that he formerly performed puncture, but recently he had abandoned it, not because of any failures, but because he feared that he might have failures. He coincided with the view that longer intervals should be permitted to elapse between applications, not only in puncture, but in intra-vaginal applications. It is desirable that the effect of one treatment should subside before another is applied.

As to the technique of puncture, there is a question as to the advantages of the buried puncture, or as to the puncture by needle not insulated.

For the reason that the vaginal surface is not so very sensitive to puncture, the needle can be introduced and

scarcely be felt by the patient, unless the needle is large and much pressure is needed to cause it to enter. It is an important point that the needles should be as fine as possible. All that is necessary is to introduce the current into the structure, which can be done with a small as well as with a large needle.

Puncture may also be employed for the relief of pain, a current of from twenty to thirty milliampères being used.

Absorption can be accomplished with the positive pole just as well, if not better, than with the negative. In cases of soft myomata the positive pole is to be preferred to the negative pole.

The bad results of abdominal puncture have been due to the fact that the currents used have been too strong. The reduction of tumors by abdominal puncture can be accomplished by the employment of from ten to twenty milliampères and several needles. The needles need be no larger than exploring needles.

DR. HAYD spoke favorably of vaginal puncture for cellulitic deposits, adding that it materially assists in resolution and relieves pain, and is practically without danger. There is greater danger, however, from puncture through the abdomen; unrecognizable complications may exist: an encapsulated ovarian cyst, or a tumor, fibroid in character, which has undergone cystic degeneration, or is the seat of abscesses, may be mistaken for a large fibroid. A few enthusiastic and good men may obtain good results from good work, but much harm may be done by giving general sanction to the procedure. The intestines sometimes intervene between the tumor and the abdominal wall; there may be adhesions, or a bloodvessel may be punctured, with a resultant hematocele. In the vagina the danger is not so great as the puncture through the abdomen.

DR. VON RAITZ, of New York, read a paper on "Perimetritis and Parametritis," giving a short sketch of the pathology of both affections, and the physiological and chemical actions of the constant current. He laid stress upon such knowledge, as it does away with the empiric use of electricity and gives the profession a means of working scientifically and successfully.

In one case of parametritis and in one of perimetritis, the positive pole was placed alternately over the hypogastrium and sacrum, and the negative in the vagina; but in the case of perimetritis he introduced the electrode into the womb, and finally, as he thought nature intended evacuation of the abscess, which was peculiarly situated in the utero-vesical space, he made applications through the bladder. In the vagina he used 30 milliampères, gradually and slowly increased from about 20 milliampères; in the womb he in the same way used 30 milliampères, and in the bladder 20 milliampères.

With the negative pole in the vagina the sittings were of about one-half hour; with the electrode in the uterus and bladder of about fifteen minutes' duration. To prevent cystitis he used a solution of methylene-blue.

DR. BIGELOW expressed his disbelief in parametritis. He admitted that that which comes from septicemia does exist, but pure cellulitis or parametritis is very rare, especially where there is no salpingitis with it. When there is fluctuation in either fornix or a history of hectic, and when a circumscribed, round swelling can be distinguished, there is usually salpingo-ovaritis. Perimetritis is quite frequent and the inter-menstrual pains simulate peritonitis.

DR. GOELET stated that in parametritis and perimetritis he did not make applications to the interior of the uterus, but to the vagina; it was just these conditions that led him to propose the carbon electrode to be covered with clay, so that it could be employed without cauterizing the vaginal surface. As an additional protection he suggested that the electrode be dipped in a solution of sodium bicarbonate; but egg-albumin constitutes a much better protection. The local action of the pole takes place on the albumin instead of on the mucous surface.

Dr. Goelet considered it a good point to shift the poles, to obviate the setting up of an irritation at the point of application at one sitting. The positive pole relieves. An auxiliary to the treatment is the faradic current after the application of galvanism. It aids not only in making the patient more comfortable, but it also accelerates absorption. In some sensitive conditions the negative pole cannot be used unless the positive pole is afterward employed.

DR. MOSHER stated that he had had some favorable results from the employment of electricity in the treatment of retroversio uteri. He at first used the negative galvanic current with the ball electrode covered with cotton, but not successfully. He could not carry the ball electrode high enough to reach the part of the uterus desired, so that he devised a copper wire, in turn covered with wire, so curved that it passed high up into the uterus. By progressive modifications he was able to carry the current to the posterior wall of the uterus high up, without disturbing the ovary; by lowering the external end of the stem, he could, in many instances, replace the uterus so as to obtain not only the vital action of the current upon the muscular fibers, but a direct action on the muscular fibers of the round ligament, thereby helping to strengthen the anterior supports of the uterus. In many cases he has observed the thickened wall of the posterior part of the uterus thin out in six weeks, after four or five applications, as if the walls had been partially removed, and he has thus been able to find fibroid tumors that could not be felt at all before the treatment.

DR. NUNN stated that burning of the skin when strong currents are employed can be obviated by the interposition of a piece of wet chamois-skin between the skin and the electrode.

He maintained that electro-massage is not sufficiently attended to. A coarse current, thrown into a particular part, will set in motion the deeper muscles, occasioning an electric massage, where ordinary massage was not available.

DR. MASSEY stated that he did not think it proper to attribute all the results to the acids and alkalies present. These bodies only appear in the immediate neighborhood of the poles.

DR. WILLIAM JAMES MORTON, of New York, read a paper entitled "Metabolic Polarity and Electro-therapeutics," in which he developed certain propositions:

1. The mutual relations of the two elements and the electrolyte of an artificial voltaic cell are also the mutual relations of protoplasmic parts of living organisms during the process of living.

(*a*) The oxidation of the positive plate of the cell (the zinc) corresponds to the destructive or katabolic chemical exchanges producing waste products—urea, uric acid, kreatinin, etc.

(*b*) The hydrogen or other bases acting at the negative plate correspond to the constructive or anabolic chemical exchanges.

(*c*) The decomposition of the electrolyte corresponds to the decomposition of the animal electrolyte (blood, lymph, and other fluids).

(*d*) Oxygen and hydrogen are referred to not as the only reaction-agents, but also as types of their congeners engaged in the complex chemical exchanges of living organisms.

2. During functional rest of a given living animal area, the anabolic, constructive action or storage of energy goes on, and during functional activity the katabolic, destructive action or releasing of energy goes on, as evidenced by their opposite polarities, positivity (in the internal circuit) being the sign of functional activity, and negativity in the same circuit the sign of functional rest.

3. What was a negative (anabolic) focus during rest becomes a positive (katabolic) focus during activity.

This conception of changeable electric relation is based, among other reasons adduced by the author, upon the prior voltaic chemical relation, during which, in the complex chemism of living organisms, compounds of, for instance, hydrogen, carbon, nitrogen, or sulphur are produced at the negative element with the *absorption* of heat. Such compounds in inorganic chemistry are termed endothermic; they are more or less unstable, easily decomposable or even spontaneously decomposable or explosive. They *evolve* heat by their decomposition.

In functional activity, it is claimed that it is these unstable endothermic substances, formed by protoplasmic voltaic action during rest, which are decomposed with production of an electric current in an opposite direction ("negative oscillation").

It may be presumed that a neural impulse, efferent or afferent, initiates the explosion.

The superior power of the kathode in exciting physiological activity (including the phenomena of electrotonus) may be due to its increasing the already progressing formation of unstable or explosive material.

4. In addition to the storage-material synthetized by the animal itself, and furnishing during functional activity an electro-positive plate, the principal electro-positive fuel or oxidizable tissue is furnished by the food assimilated by the animal, which food is the result of the anabolic, storage, or constructive faculty of the plant.

5. The origin and initiation of an electric current and consequent polarity cannot be from the electro-negative plate of a voltaic cell, but the current arises from the initial chemical action at the electro-positive plate and therefore the starting-point of living chemical exchanges is in the electro-positive plate—that is to say, is katabolic, oxidizing, or destructive. At the negative plate energy is stored or rendered potential. The same is true of all the energies.

As a consequence, all metabolism, all chemical exchanges in living, animal organisms, are initially electro-positive, and if an anabolic, constructive or electro-negative focus is found by tests, it is not primary but accidental, and the result of the action of a conductively associated katabolic or oxidizing positive plate.

6. It follows that morbid metabolism, constructive or destructive, is primarily electro-positive.

7. This invariable focal positivity provides an accurate guide to medical treatment by electricity, for the morbid-tissue focus itself may be regarded in the same light as an artificial voltaic couple. The reactions following may be experimentally demonstrated upon an artificial cell.

8. Morbid metabolism may be divided into—

(*a*) Excessive chemical exchanges; (*b*) Deficient chemical exchanges.

In over-activity of the chemical exchanges—(*a*) An applied positive pole will increase the activity, *i. e.*, augment the disease; (*b*) An applied negative pole will diminish the activity, *i. e.*, palliate or cure.

In under-activity—(*a*) An applied positive pole will increase the activity, *i. e.*, palliate or cure; (*b*) An applied negative pole will diminish the activity, *i. e.*, augment the disease.

Two directions only are open for curative treatment. In over-activity the negative pole palliates or cures. In under-activity the positive pole palliates or cures.

9. If an electro-negative focus (here held to be secondary and incidental) is thought to be most desirable to be treated, the polarities indicated must be reversed.

This theory implies that vital processes are electrolytic and electro-synthetic, plus a directive tendency which is a mystery; it implies that the processes of living proceed according to electric laws, releasing by the electro-chemical action of oxidation, combustion, or katabolism, heat, mechanical, electric, and other energies, with the production of the waste-products of excretion—urea, uric acid, kreatinin, etc., and storing or rendering potential the same energies by the electro-chemical action of anabolism, with the production of formed chemical products essential, in the case of the animal, to its specialized existence—ferments, fats, glycogen, etc.

It claims as a speculative postulate, that the fundamental starting-point of both release and storage of energy, of the destruction and the construction of products, of katabolism and anabolism—of, in short, metabolism—is situated at protoplasmic foci consisting of protoplasm oxidized (or similarly attacked) and the oxidizing or attacking electrolyte of the protoplasmic voltaic couples—that the protoplasmic area attacked is therefore electro-positive, and that as a consequence of this initial action at the electro-positive area or element a secondary constructive, storing, and anabolic chemical reaction is accomplished at a protoplasmic electro-negative area or element—in short, that anabolism is secondary to and dependent upon the initial katabolism.

The theory also implies that the animal continually dies that it may live—that its constructive metamorphosis is initially dependent upon its destructive; and more concisely, as regards the constructive, that it is due to the chemical union of substances set free at the positive element by oxidation and allied actions, or there receiving a determining combining direction toward the negative element, and uniting with other substances at this negative element antecedently oxidized or not—that, in short, katabolism and anabolism are inter-

allied in an electro-chemical cycle composed of protoplasmic voltaic couples where katabolism initiates that movement which results both in waste products and in formed products, in released energies and in stored energies, in the currents of rest and of action, and which, when it ceases, is death of the part or of the whole.

It is this katabolic beginning, signalled by focal positivity, that we may hope to influence by an applied external energy and thus influence those life-processes that underlie it; and since this initial katabolic center is the source of heat, mechanical force, electric energy and of all the other phenomena of life, normal as well as morbid, we are in a position to suggest that this electric index of demonstrable and invariable electro-positive polarity is a guide which may enable the physician to thread the labyrinth of health and disease, and to apply a counter or an aiding energy in such a manner as to affect the normal or morbid phenomena by affecting their initial and underlying chemico-biological processes. As regards electric energy, it is believed that this may be accomplished in the manner outlined.

DR. NUNN stated that the theory of the chemical action should not be too exclusively adopted. Beyond it there is a great vital force or great unknown.

We talk of electricity flippantly as a fluid or force; we theorize with it; but we cannot say what it is. There is no doubt of its chemical action, but there is something besides in all cases. There is that vast field of static electricity which has little or no chemical action at all.

Magnetism more nearly resembles life-force than does electricity.

Keeping so closely to the chemical theory makes us lose sight of another great fact, that every molecule of the body is an independent being to a certain extent. Every single blood-corpuscle is in itself an independent being as far as it goes. In no other way can be explained the fact that the blood-corpuscle takes up its oxygen and nutrition and deposits them in the tissues and goes away again.

Clinically, Dr. Nunn has observed the following rule: Whenever there is tenderness upon pressure and inflammation, to use the positive, and whenever there is a swelling, as in tumors and chronic diseases, to use the negative pole.

In conclusion, DR. MORTON added that he dwelt especially upon chemical phenomena because he had to deal with what exists. The chemical life of the animal cell is an actual fact. He knew nothing about vital forces. He had never tasted, heard, or felt them; he knew nothing of entity or ideation. Vital force is just as much a mystery at the end as it is at the beginning, but the chemical affinity is a demonstrable fact—it is a thing.

DR. PLYM S. HAYES, of Chicago, read a paper entitled "Some Points in the Technique of Electrolytic Epilation," in which he maintained that, performed for therapeutic or cosmetic purposes, care should be taken to destroy the hair without leaving scars.

Theoretically, the needle to be employed in electrolytic epilation should be so constructed that it will reach the bottom of the hair-follicle and come in contact with the papilla, without doing violence to the tissues; it should be so arranged that the current will exert its electrolytic effects only at the point of contact with the papilla.

Dr. Hayes had early discovered that a blunt-pointed needle was much better than a sharp one, and a thin one than a thick one.

After a long series of experiments he came to the conclusion that steel was the only material that would give a needle of sufficient tenuity and yet having the strength and rigidity to accomplish the desired result.

The best material for the needle is found in the jeweller's "broach." This is ground to a diameter of from one two-hundreths to three two-hundredths of an inch. For one-sixteenth of an inch from the point it should be slightly thicker than the shaft; although this bulbous point is of advantage it is not an absolute necessity. The point of the needle should, as nearly as possible, represent a hemisphere. A conical point should never be used, because of the danger of piercing the walls of the hair follicle.

The temper of the jeweller's broach renders the steel exceedingly brittle; it has been found of advantage to draw the temper, in order to prevent breakage of the needle. This is best accomplished by heating in the flame of an alcohol lamp or Bunsen burner a glass tube of about one-fourth of an inch in diameter, closed at one end and containing the needle, until the tube begins to become slightly red, when it is put aside to cool. The needle will be found to be flexible, yet sufficiently rigid.

The strength of current required varies from three-fourths of a milliampère to a milliampère and one-half, and in rare instances possibly three milliampères. The strength of the current, however, must of necessity be regulated by the amount of chemical action which takes place around the needle, as well as by the amount of pain produced.

As a rule, the weaker the current, the longer the time required to destroy the tissue, including the hair-papilla. From three to six cells of the diamond carbon battery are usually sufficient.

If three or four storage cells are connected in series for tension, the current obtained from such a battery can be used.

The commercial current from an Edison plant has been successfully used. The pain produced, however, is ordinarily so great as to make its use undesirable.

The resistance in the circuit outside of the battery should be as little as possible. A battery with large cells and large elements is preferable to one with small elements.

In introducing the needle care should be taken that it follows the hair closely. The application should not last long enough to give rise to a subsequent scar.

If, by reason of the size and density of the hair and root sheaths, the needle is arrested before it has entered much beyond the neck of the follicle, the current should be permitted to pass until any adhesions that may exist are overcome.

CORRESPONDENCE.

PUBLICATION OF SOCIETY PAPERS.

To the Editor of THE MEDICAL NEWS,

SIR: If a foreigner be allowed to second an opinion advanced by an American in regard to the publication in American medical journals of papers read before

medical societies, I shall permit myself to do so on the strength of the editorial that appeared in The Medical News of September 12, 1891. It certainly seems to me to be the greatest mistake that a scientific society can commit to prevent the immediate and extensive diffusion throughout the whole medical world of the work done by its members; but this is what is constantly done in America, and what I have been sorry to notice repeatedly during my visits to your country. If American medical societies, as all the prominent European societies do, would publish their reports two or three days after each meeting, such reports would be of the greatest value to scientific investigators; but appearing as they do, rarely earlier than a few weeks after the meeting, and in too many instances a year later, these at all times important reports are not only not consulted by foreigners when they finally do appear, but, as a rule, are passed by altogether—not only to the detriment of correct bibliography, but also to the discredit of American scientific workers.

European societies, and particularly the prominent French medical societies, such as the Paris Academy of Medicine, the Society of Surgery, the Society of Hospital Physicians, the Biological Society, etc., do not only publish their reports promptly, but in order to promote a greater and more rapid diffusion of their proceedings, actually reserve to the members of the medical press a special table, where the stenographer of each journal takes his notes for the purpose of reporting immediately both the original papers and the discussion thereon, so that the very next day, for instance, after the weekly meetings of the Paris Academy of Medicine and the Paris Surgical Society, the principal medical papers appear, so that the physicians throughout the country know more or less *in extenso* what has occurred the day before at the meetings of the respective societies. Moreover, authors of original papers are allowed to communicate to the medical press extracts from their papers; and it will be readily admitted that no one is better able than the author to determine what he really intends to convey to his professional brethren.

I have often heard American physicians visiting Paris complain of the scant notice taken of American medical works in European medical literature, a fact solely due to the regrettable delay in publishing the transactions of American medical societies, which delay fully accounts for the other fact, that a subject when finally published in America *as new*, has already become an old story on this side of the great pond.

As it now is, the want of a prompt and extensive publication in the American medical press of the reports of original papers and discussion thereon which are presented at the meetings of American medical societies, has, in the minds of many European scientists, induced the mistaken idea that very little is being done in the United States in a strictly scientific sense, which thereby places the American medical profession apparently in a state of scientific inferiority as compared with other nations. Again, this apparent status of inferiority contributes to encourage the unfortunate belief that American medical diplomas are still obtainable through purchase by persons who have never gone through their regular medical studies or passed a university examination—a belief which, from my better personal knowledge, I have persistently endeavored to correct on every occasion that offered.

If I have taken the liberty to express myself so plainly, and to ask the intermediation of your estimable journal, my only apology is that, having spent several years in America, I have had ample opportunity to judge personally of the careful work and the thorough researches made by Americans in the medical domain. I have had the honor of completing my medical education and graduating at one of the prominent medical institutions of your country, and I feel all the more anxious that my European fellow-practitioners should know and be kept constantly *au courant* of the excellent work done in the United States in the medical line. I remain, my dear sir, most sincerely yours,

Arthur C. Hugenschmidt, M.D. (Univ. Pa.).
15 Rue de la Paix, Paris.

WASHINGTON DRINKING-WATER.

To the Editor of The Medical News,

Sir: Permit me to make a few statements in answer to an editorial which appeared in the issue of October 3d, and in which the drinking-water of Washington is directly blamed for the various intestinal disturbances with which many members of the recent Medical Congress were affected. Let us see how far this assertion may be regarded as just.

First, in regard to the drinking-water itself. By referring to The Medical News of April 9, 1887, you will observe that the number of bacteria in Potomac drinking-water during the summer and autumn, when not stirred up by very heavy rains, is quite low. When, however, in winter and early spring the water becomes clouded or turbid after heavy rains, the earthy matter causing the turbidity brings with it many bacteria. These disappear with the subsidence of the suspended matter. The Potomac water could not have contained more than 100 to 200 bacteria in a cubic centimeter at the time of the meeting. These bacteria are such as are constantly present in streams of any size uncontaminated by sewage. The water is therefore much safer than that of most large cities of this country.

On the other hand, the real cause of the intestinal disorders lies obviously in another direction. The continued and unparalleled hot weather in September, following upon the coolness of the summer, must have taken dealers in provisions everywhere by surprise. With an inadequate ice supply for the time being, a deterioration of the food was a matter of course. I observed several facts bearing directly upon this point during the hot wave.

It is a curious fact that the richly albuminous foods coming from distant places and passing through many hands, in which putrefactive bacteria might revel in the production of toxic products before they reach the table, foods not even sterilized by the ordinary processes of cooking (such as oysters, milk, ice-cream, etc.) should be implicitly trusted, and the uncontaminated Potomac water should receive all the blame. Again, most of the water drunk at this time must have been melted in ice, and this, I believe, is above suspicion.

If it should be shown in the future that Potomac River water is actually the cause of intestinal disturb-

ances among strangers temporarily residing here, we must assume that in this latitude the water bacteria are more irritating or toxic varieties of the same bacteria in northern streams. For this assumption there is no supporting evidence at present.

It is not my intention to imply in these brief remarks that the water-supply of Washington does not need serious attention, but the evils to be remedied do not appear to be inherent in the source of the supply, but rather in its distribution. THEOBALD SMITH.

WASHINGTON, D. C.

THE DRINKING-WATER OF WASHINGTON.

To the Editor of THE MEDICAL NEWS,

SIR: While no apology is to be offered for the unfortunate atmospheric vicissitude that attended the late meeting of the Medical Congress and the apparent resulting disturbance of function in the gastro-intestinal apparatus of many of its members, yet what is said in a leading article of your issue of October 3d cannot in justice be overlooked, since it appears as a pointed criticism.

From a medico-topographical sense Washington is not a place that one would select as conducive to the highest state of health, but it compares favorably with other towns as regards the showing of vital statistics. Indeed, the records show that New York, Boston, Charleston, Hoboken, Lowell, Mobile, Newark, New Orleans, Savannah, Brooklyn, Jersey City, and a majority of other towns, have a higher death-rate than Washington. Besides, the young men of the Columbia Athletic Club, who had their aquatic training on the Potomac, have twice carried off the first honors at the Staten Island Regatta and at Boston, where the supply of microörganisms in the drinking-water is presumably a few millions less than that of our home supply.

As a matter of fact, no particular fault is to be found with Potomac water, which stands fourth in purity on the analytical table of the water-supply of the principal cities of the United States. To be sure, I never drink it, and have not touched a drop of water for months, except for purposes of ablution and swimming; nevertheless, I did not escape a slight attack of the prevailing endemic. Many of us remember withs orrow the similar affliction that overtook visitors to the Philadelphia Centennial. I fear, however, that if the truth were told, a different cause would be given for these expressions of remorse of a guilty stomach, and that there would be revealed certain irregularities and disregard of ordinary hygienic rules, the principal of which was immoderate use of iced drinks whose chief ingredient was not *water*.

IRVING C. ROSSE.

WASHINGTON, D. C.

PURPURA HÆMORRHAGICA, OR PELIOSIS RHEUMATICA?

To the Editor of THE MEDICAL NEWS,

SIR: THE MEDICAL NEWS of August 8, 1891, contained the report of "A Fatal Case of Purpura Hæmorrhagica," by Dr. D. J. Milton Miller, of Philadelphia. It appears to me that the case is one of peliosis rheumatica, and not of purpura hæmorrhagica. Indeed, the patient was a male, and we know that peliosis rheumatica is more frequent in males; it is just the contrary in purpura hæmorrhagica, or morbus maculosus Werlhofii. The pains and swelling of the joints are special to peliosis, and not to purpura. Eichhorst says that sometimes slight pain and swelling of the joints also appear in purpura, but in peliosis pain and swelling are decided. In the latter, spots in the mucous membranes, almost constant in purpura, are generally not observed. However, Kaposi in one case found hematuria, and in another ecchymosis followed by gangrene of the mucous membrane of the palate. Edema of the eyelids is very common in peliosis, but not in purpura. Also, the large size of the spots is more in favor of the disease that Schönlein named peliosis rheumatica than of purpura hemorrhagica.

It is true that some authors do not consider peliosis as a special disease, and include it in morbus maculosus Werlhofii. Thus Dieulafoy, in his *Manuel de Pathologie Interne*, treats peliosis in the same chapter as purpura, and says, with Besnier, that in the majority of cases it is a question rather of purpura with rheumatism than of rheumatism with purpura.

Jacconet, on the contrary, treats of purpura in the chapter on scurvy, and says that it is not to be confounded with rheumatism complicated with purpura. Birch-Hirschfeld also, in his *Lebrbuch der path. Anatomie*, makes a distinction between peliosis and purpura, and so do many others. For these reasons it appears to me that the case related by Dr. Miller must be considered a case of peliosis rheumatica.

Believe me, yours truly,

DR. DONINO CROSTI.

RIO GRANDE, ZACATECAS.

The foregoing communication was presented to Dr. Miller, who has forwarded the following reply:

THE objections made by Dr. Crosti in his letter are, to my mind, hardly warranted by a careful reading of my report in THE MEDICAL NEWS of August 8, 1891, even if one believes that peliosis or purpura rheumatica is an independent affection, and not a complication, or one of the forms of ordinary purpura, as it probably is. The nosological position of any disease is, I take it, to be decided by its most prominent features, and the resemblance it bears to some general type. Looking at the nomenclature of my case from this standpoint it certainly deserves to be classed with the hemorrhagic form rather than with the rheumatic form described by Schönlein. Barring the joint-symptoms, which were more marked at the onset, as a reference to my report will show, the symptoms were all those of the severer types of the former disease. The suddenness of the onset, the size and depth of the cutaneous hemorrhages and their tendency to become gangrenous, the invasion of the mucous membranes, the hemorrhages from the kidneys, the intestines and lungs, and the rapidly fatal nature of the attack, all point to this conclusion.

That the presence of the joint-symptoms made the attack different from the ordinary types of hemorrhagic purpura was recognized in the title of the manuscript sent to you, which was "A Fatal Case of Purpura Hæmorrhagica, with Joint-Symptoms," and which, for brevity's sake, was altered to the shorter title of the printed article.

But there are no hard and fast lines distinguishing the different forms of purpura. They merge one into the other, each case being classified according to its predominating symptoms—and as the case reported by me was of a decidedly hemorrhagic type, I feel justified in calling it by the name I did. D. J. Milton Miller.

Philadelphia.

TOPICAL APPLICATION IN DIPHTHERIA.

To the Editor of The Medical News,

Sir: Having used with signal success the following formula as a topical application to the throat in the treatment of malignant diphtheria, I make this report so that a thorough test of it may be made:

℞.—Acid sulphurosi	f ℥ss.
Liquor potassæ	gtt xl.
Aquæ calcis . . .	ad f ℥iv.

Mix, filter; keep well corked, in a cool place. To be applied topically to the throat by means of a sponge, probably every hour or two.

Respectfully,

Ernst Timmermann, M.D.

Batesville, Ind.

REVIEWS.

Guy's Hospital Reports. Edited by N. Davies-Colley, M.A., M.D., and W. Hale White, M.D. Vol. xlvii., being vol. xxxii. of Third Series. 8vo., pp. xliii., 369. London: J. & A. Churchill, New Burlington Street, 1890.

The present volume maintains the high standard of the reports from Guy's, and its value is enhanced by the frontispiece, an excellent autotype reproduction of a full-length photograph of Sir William Gull. The memoir of Sir William, with which the volume opens, is sympathetically written and is well worthy of careful reading and reflection by the ambitious young physician of the day. Mr. Davies-Colley's report of cases of anthrax is a noteworthy article, and his experience with the use of ipecacuanha, internally and externally, as recommended by Dr. Muskett (*Lancet*, vol. i. p. 268, 1888) is especially interesting. Of five cases thus treated, all recovered, although three of the five had anthrax of the neck and one was in great danger. Of eight cases previously treated without ipecacuanha, two died; in both of them the neck was involved. Mr. Percy C. Evans adds a note on the action of ipecacuanha upon the bacillus anthracis. His research shows that drug to have a very decided power to destroy the bacillus when growing in broth and free from spores. On the other hand, the powder was found to have no effect whatever on the anthrax spores even after acting twenty-four hours. This failure is of no importance as regards the therapeutic action of ipecacuanha, inasmuch as anthrax bacilli never produce spores in the living tissues. Emetine was found to have no action on the bacilli, and consequently the virtue of ipecacuanha must be due to some other constituent.

Hale White contributes an interesting paper on primary malignant diseases of the liver, and James F. Goodhart an instructive lecture "chiefly concerning bruits." The pathology and prognosis of pernicious anemia also receive attention from Dr. Hale White, who insists that it is a distinctive disease, characterized by the absence of the "ordinary causes or concomitants of the anemic state." In an appendix a summary is given of all of the cases of pernicious anemia that have died in Guy's Hospital from 1855 to 1889, both years inclusive. The fact that a number of patients discharged apparently well, afterward returned and died, taken with the fact that, with one exception, Dr. White was not able to get evidence that any of the cases discharged as improved during the last ten years have remained well, shows that the prognosis is very gloomy; and that, for the future, cases should not be recorded as having recovered unless they have been followed up for some years. Two cases of genuine recovery, one his own and one Dr. Pye-Smith's, find place in Dr. White's lists. Want of space prevents allusion to the many other excellent papers in this volume.

Addresses, Papers, and Discussions in the Section of Obstetrics and Diseases of Women at the Forty-second Annual Meeting of the American Medical Association, at Washington, D.C., May 5–8, 1891.

The papers contained in this pamphlet deal with a series of important subjects, both in obstetrics and gynecology. The benefit to the reader, however, is derived not so much from the general tone of the book as from the worth of a few preëminently good articles. The reason for this lies in the want of conservatism on the part of many of the writers on gynecological subjects. The papers on this branch are, for the most part, from the pen of those who look upon gynecology as a branch of surgery, and who are inclined to throw upon those whom they designate as minor gynecologists all the responsibility of ineffectual treatment. The first article, by Dr. J. G. Carpenter, of Stanford, Ky., on "Rapid Dilatation and Curetting," loses much of the effect of the sound teaching that it contains by emphasizing the fact that failures of diagnosis and misapplied treatment, notably dilatation and curetting on the part of the practitioner, are responsible for most of the evils that call for the surgeon's treatment. He fails to admit, however, that when the diagnosis is left to the surgeon, he is as apt to stumble as the "minor gynecologist."

As usual, the subject of technique in abdominal work comes to the front in these articles. This is an unfortunate indication. There is too much attention given to technique at the sacrifice of diagnosis. The pendulum has not yet ceased swinging between surgical enthusiasm and the belief in medical treatment in gynecology.

One of the most instructive articles is by Dr. Eliza C. Minard, of Brooklyn, on "Pathological Anteflexions of the Uterus." The writer reports a case in which Dudley's operation for anteflexion had been performed with good result. The writer resorted to this treatment not because she was an advocate of the operation, but because all other forms of treatment had failed; therefore, the results are judged by her without bias. This surely strengthens the recommendations that have been put forth by the originator of the operation, and demands that this method should have future trial.

Dr. Henry C. Coe, in a paper on "Adenoma Uteri," concludes his discussion of the treatment of this affection by stating that total extirpation alone is indicated, basing this conclusion on the assertion that there is only one variety of true adenoma, and that clinically this is essentially malignant. This is a new departure in the subject that must be considered with great care before criticising, inasmuch as it comes from one perfectly qualified to originate such a doctrine.

In obstetrics there is little that is original to which reference need be made. The only article which we have space to mention is that of Dr. Henry D. Fry, of Washington. He epitomizes the accepted opinion in regard to the treatment of eclampsia by the introduction of premature labor.

NEWS ITEMS.

Evening Lectures at the Polyclinic.—A series of lectures will be delivered during the coming winter in the evening at 8 o'clock by the members of the Faculty of the Philadelphia Polyclinic and College for Graduates in Medicine, of which the following are announced: Nov. 3d, Dr. Edward Jackson, Shadow Test; Nov. 6th, Dr. B. F. Baer, A Plea for Early Diagnosis; Nov. 10th, Dr. Edward Jackson, Shadow Test; Nov. 13th, Dr. B. F. Baer, The Treatment of Retro-displacements; Nov. 17th, Dr. T. S. K. Morton, Appendicitis; Nov. 20th, Dr. R. W. Seiss, Treatment of Aural Pain.

The Mississippi Valley Medical Association held its seventeenth annual session at St. Louis, Oct. 14, 15, and 16, 1891, President Dr. C. H. Hughes, of St. Louis, in the chair. Dr. C. A. L. Reed, of Cincinnati, was elected President; Dr. E. S. McKee, of Cincinnati, reëlected Secretary; Dr. C. S. Bond, of Richmond, Ind., and Dr. J. H. Stucky, of Louisville, Vice-Presidents; Dr. Joseph Ransohoff, of Cincinnati, Chairman of the Committee of Arrangements. The next meeting is to be held in Cincinnati, October, 1892.

Pan-American Congress.—The Committee on Permanent Organization of the American Medical Association has decided to change the name of the Association to the Pan-American Congress. The convention will be held in Washington on the first Tuesday in October, 1893. Dr. William Pepper, of Philadelphia, was elected President, and Dr. Charles L. Reed, of Cincinnati, Secretary-general.

Professor Binswanger has been made Ordinary Professor of Psychiatry at Jena.

BOOKS AND PAMPHLETS RECEIVED.

Prevalence of Astigmatism. By Charles W. Dodd, M.D. Reprint, 1891.

Fracture at the Elbow-joint. By Thomas H. Manley, M.D. Reprint, 1891.

Resection as a Substitute for Primary Amputation. By Thomas H. Manley, M.D. Reprint, 1891.

Tumors of the Naso-pharynx, Pharynx, Larynx, and Esophagus. By W. Cheatham, M.D. Reprint, 1891.

The After-treatment of Cases of Abdominal Section. By Charles P. Noble, M.D. Reprint, 1891.

Abdominal Surgery at the Kensington Hospital for Women. By Charles P. Noble, M.D. Reprint, 1891.

Unique Case of Cæsarean Section. By Charles P. Noble, M.D. Reprint, 1891.

Higher Education in Indiana. By James Albert Woodburn, Ph.D. Washington: Government Printing Office, 1891.

Medical Communications of the Massachusetts Medical Society. Boston, 1891.

L'Autre Voie à propos de l'Hysterectomie par la Méthode Pean-Ségon dans les inflammations pelviennes. Par le Dr. A. Doléris. Clermont (Oise): Imprimerie Daix Frères, 3 Place Saint-Andre, 1891.

Enucleation des Fibro-myomes Utérins par la Voie Abdominale, ses Avantages sur l'Hysterectomie Supra-vaginale. Par le Dr. R. Chevrier, d'Ottawa (Canada). Clermont (Oise): Imprimerie Daix Frères, 3 Place Saint-Andre, 1891.

The Treatment of Erysipelas. A Personal Experience in Fifty Cases. By Charles W. Allen, M.D. Reprint, 1891.

Clinical Comments on Cutaneous Cases. By Charles W. Allen, M.D. Reprint, 1891.

Pemphigus Circinatus. By Charles W. Allen, M.D. Reprint, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 20 TO OCTOBER 26, 1891.

BIART, VICTOR, *Captain and Assistant Surgeon.*—Having been found incapacitated for active service, on account of disability incident to the service, is, by direction of the President, retired from active service, to date October 21, 1891.

VICKERY, RICHARD S., *Major and Surgeon.*—Is relieved from duty at the Army and Navy General Hospital, Hot Springs, Ark., and ordered to duty at Fort Monroe, Va.

MUNN, CURTIS E., *Major and Surgeon.*—Upon being relieved from duty at Fort Monroe, Va., is ordered to duty at Mount Vernon Barracks, Ala.

CLEARY, PETER J. A., *Major and Surgeon.*—Upon being relieved from duty at Mount Vernon Barracks, Ala., is ordered for duty at Fort McPherson, Ga.

HAPPERSETT, JOHN C. G., *Major and Surgeon.*—Upon being relieved from duty at Fort McPherson, Ga., is ordered for duty at Fort Custer, Montana.

GARDNER, EDWIN F., *Captain and Assistant Surgeon.*—Will proceed from Fort Porter, N. Y., to New York City, N. Y., for temporary duty as Attending Surgeon and Examiner of Recruits in that city.

WATERS, WILLIAM E., *Major and Surgeon.*—Upon being relieved from dury at Fort Custer, Montana, is ordered for duty at Columbus Barracks, Ohio.

JARVIS, NATHAN S, *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Bayard, New Mexico, and ordered for duty at San Carlos, Arizona Territory.

JOHNSON, RICHARD W., *Captain and Assistant Surgeon.*—Upon being relieved from duty at San Carlos, Arizona Territory, is ordered for duty at Fort Bayard, New Mexico.

BROOKE, BENJAMIN, *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Riley, Kansas, and ordered for duty at Fort Leavenworth, Kansas.

KEEFER, FRANK R., *First Lieutenant and Assistant Surgeon.*—Upon being relieved from duty at Fort Leavenworth, Kansas, is ordered for duty at Fort Riley, Kansas.

MIDDLETON, PASSMORE, *Major and Surgeon.*—By direction of the President, will report in person to Colonel Melville A. Cochran, Sixth Infantry, President of the Army Retiring Board at Newport Barracks, Ky., for examination by the Board.

GANDY, CHARLES M., *Captain and Assistant Surgeon.*—Is granted leave of absence for fifteen days, to take effect on final adjournment of Army Medical Board, now in session in New York City, N. Y.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A CASE OF ACUTE SPINAL PARALYSIS; DEATH ON THE TWELFTH DAY; AUTOPSY SHOWING TRANSVERSE CERVICAL MYELITIS.[1]

BY WHARTON SINKLER, M.D.

With a Report of the Microscopical Examination,

BY C. W. BURR, M.D.

THE following case is of interest because, while having the clinical history both of acute poliomyelitis anterior and of Landry's paralysis, the post-mortem results show a transverse myelitis involving only the cervical portion of the cord:

The patient was a well-grown young man, eighteen years of age, of good habits, and without hereditary history of consumption or nervous disease. He was an only child, and had enjoyed excellent health until July, 1890. On the 10th of this month he went to New York for the day, and in the afternoon went to Coney Island. During the day the weather was intensely hot, but by evening there was a great change in the temperature, the thermometer falling several degrees. He suffered extremely from the cold, feeling chilled through. The next day he returned home to Philadelphia, and felt very weak. The day following he was a little feverish, and complained of general weakness and relaxation, with a sense of general numbness, especially from the hips down. He tottered a little in his walk, and had some cramp-like pains in the calves of his legs. He had a little pain in his back and head, and was drowsy and dull. There was some diarrhea. There was pain on movement, and when sitting, his legs seemed as if "asleep." The next day, July 12th, he was worse; he could not walk, his legs being too weak. In the evening of this day he found that there was some loss of power in his arms. This loss of power increased steadily, and by July 14th he was unable to move his legs at all, though still able to lift the arms and move the hands and fingers. There was temporary inability to void urine, and a little difficulty in swallowing. The bowels were moved by enemata.

On July 18th I saw the patient in consultation with Dr. Radcliffe Cheston, who gave me the foregoing history. The patient had been confined to bed for a week, and was steadily losing strength. I made the following notes of his condition: "There is slight paralysis of the left side of the face. He cannot whistle, and smiling draws the face to the right. The eyesight is good, although on the first day of his illness vision of the right eye was somewhat blurred. He can turn the head to either side; can extend it, but cannot flex it. He cannot extend either arm, but can partially adduct the arms over the chest. He can flex and extend both forearms, can pronate, but cannot supinate them; can flex, but can only partially extend the fingers. He can feebly extend the last phalanges, and can flex and extend the wrists. The grip is very feeble. He cannot raise the body or turn it to either side, owing to paralysis of the muscles of the trunk. There is complete loss of power in both legs. He cannot move a muscle, except to a slight extent the flexors and extensors of the toes. There is loss of most reflexes. The knee-jerk is entirely absent; no plantar or abdominal reflex is present, but the cremasteric and epigastric reflexes can be excited.

"Sensation is unimpaired in the upper and lower extremities, except as to compass-points. There is slight loss to these on the fingers and on the feet, the points being distinguished only when far apart. He locates well, and the pain-sense is unaffected. He says that the hands and feet feel numb and tingling, but he has no pain anywhere; on the day before, however, he had some cramp in his legs. There is no muscular tenderness or pain on pressure over the nerve-trunks. All the muscles respond to a slowly interrupted faradic current. The thigh muscles do not react as readily to the current as the other muscles. Speech is unaffected, but his voice is weak. He is much annoyed by accumulation of mucus in his throat."

On July 22d the patient had a return of difficulty in swallowing, and once or twice he had to be fed through the nasal tube. The respirations had become rapid and shallow. There was retention of urine the previous day, and the catheter had to be used, but he urinated to-day without trouble. The patient gradually lost strength, and died of respiratory paralysis July 22d, twelve days after the onset of the attack. The temperature during the attack was from 100° to 101°. The post-mortem was made forty-eight hours after death, the body having been preserved in an ice-box.

REPORT OF AUTOPSY BY DR. C. W. BURR.

The body was of average size and weight; the abomen was of a slightly greenish color. The scalp, the skullcap, and the dura mater were normal. The brain was of average size, and there was no edema or congestion. The convolutions showed no marked deviations from the common type. On cutting into the brain the gray and white matter showed well, and were of good consistency. The basal ganglia, pons, and medulla were healthy.

[1] Read at the meeting of the American Neurological Association held in Washington, D. C., September 22 to September 25, 1891.

The sciatic nerves were also healthy. The bones of the base of the skull and of the spinal canal showed no evidence of disease.

The spinal meninges were normal, and there was no excess of spinal fluid. The cord was of good color, form, and consistency throughout, except for apparent slight softening in the lower dorsal region, due probably to post-mortem change. On cross-section the gray and white matter were throughout well differentiated, as well in the dorsal as in the other regions. There was possibly some congestion at the cervical swelling.

After hardening for three months in Müller's fluid the following conditions were found: The cervical swelling still showed well the differentiation between white and gray matter, but it was crumbly and brittle, and irregular longitudinal fissures appeared in several places, notably in the posterior half (these occurred during hardening). It was misshapen in outline. The staining was normal throughout. The remainder of the cord, brain, etc., showed nothing abnormal.

Microscopical Examination.

Pieces were imbedded in celloidin and sections stained with carminate of soda and with Congo-red, and a few by Pal's method.

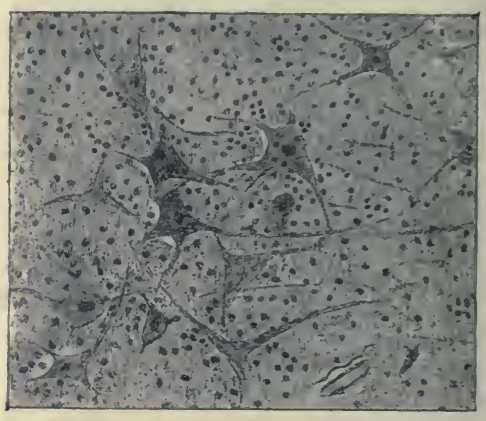
Cervical swelling. There was marked infiltration by small, round, sometimes irregularly shaped, deeply stained cells, which invaded the entire transverse section of the cord. Their distribution was not uniform, and the position of greatest intensity varied with the level of the section. In the center of the anterior gray matter on one side and posteriorly on the other were found small areas of hemorrhage and softening. There was some engorgement of capillaries. A few of the motor cells were shrunken and without processes, but most of them were normal in every respect—in form, intensity of staining, processes, appearance of protoplasm, and character of nuclei. Here and there, in irregularly-distributed spots, the nerve fibers had disappeared, but quite the larger number were still present. The pia and the posterior nerve-roots, especially the latter, were involved in the cellular infiltration. The vertical extent of the lesion was about one inch—sections from other portions of the cord, from the medulla and pons, and from the brain and sciatic nerves, showing nothing pathological.

Pathologically, the case is one of acute transverse myelitis, involving the upper part of the cervical swelling. The palsy of respiration may have been due to chemical changes sufficient to inhibit function, but not sufficient to cause material alteration of structure. The abdominal and thoracic viscera were not examined.

The accompanying illustrations made after drawings by Dr. Allen J. Smith clearly show the appearances described.

From a study of the clinical features of the case the diagnosis lies between acute multiple neuritis, acute myelitis, Landry's paralysis, and polio-myelitis anterior. Multiple neuritis can be excluded because of the absence of pain in the nerve trunks, the absence of hyperesthesia, the fact that sensibility was so little disturbed, the early loss of the reflexes, and the rapid course of the disease. Acute myelitis is accompanied with early loss of power in the sphincters, exaggerated reflexes if the disease is above the lumbar enlargement, pain in the back, contraction of the limbs, and trophic changes in the skin—symptoms all absent in this case. The symptomatology of Landry's paralysis closely resembles that

From posterior root zone.



Anterior horn, showing cellular infiltration.

of my patient, but I believe that in the typical form of acute ascending paralysis the loss of power begins in the lower extremities and spreads systematically upward. In my case, although the paralysis did begin in the legs, the loss of power in the rest of the voluntary muscles came on almost simultaneously. Still, I admit that without a post-mortem examination it would have been next to impossible to say that the case was not one of Landry's paralysis. Dr. Henry Hun read before the New York Neurological Society a valuable paper on the pathology of acute ascending paralysis.[1] The case reported by him is so strikingly like the one I have related that I will give it at some length.

[1] Journal of Nervous and Mental Disease, June, 1891.

An unmarried man of forty-five years, free from any syphilitic or rheumatic taint, was suddenly attacked, April 11, 1890, by a paresis of the legs, which in the space of four days became a complete paralysis, and then in a few days more there was loss of power in the arms and hands. He had a difficulty in speech. It was necessary to draw the urine with a catheter. The bowels were constipated. This seemed due rather to weakness of the abdominal muscles than to paralysis of the bladder and rectum. He was admitted to the Albany Hospital April 18, 1890. Ten days after the beginning of weakness in the legs Dr. Hun made the following note of the patient's condition: "Well nourished. Ptosis of right eyelid, which he says is voluntary and due to impairment of vision. This impairment of vision seems to consist of diplopia, one object being to the right of and lower than the other. Decided paralysis of lower branch of left facial nerve. Tongue protruded straight, no tremor of tongue or lips, and no muscular atrophy or fibrillary contraction. Breath very offensive and tongue covered with a white coat. He can whistle with difficulty. Speech thick and indistinct. Deglutition so difficult that he has to be fed with stomach tube. Mucus collects in trachea and patient can eject it very imperfectly. Hearing, smell, and taste are normal. Grasp of left hand *nil.* Grasp of right hand very feeble. Flexors and extensors of upper arm very feeble, but more powerful than those of forearm. Muscles of shoulder feeble, but more powerful than those of arm. Muscles of body paralyzed so that he can neither sit up nor move in bed. Absolute motor paralysis of both legs and thighs. Absence of plantar, cremasteric, umbilical, and patellar reflexes. No muscular tenderness, fibrillary contraction, or atrophy. No disturbance of sensibility, tactile (tested with pin-head and cotton), thermic, or painful impressions anywhere. No retardation of conduction of pain. Bladder and rectum inactive. Urine drawn off with catheter. Bowels moved by castor oil or by injection. Temperature and pulse normal. On April 22d, the muscles of both arms are much weaker, and those of the right arm and shoulder are weaker than those of the left, so that he can scarcely move the right arm at all. The muscles of the legs continue completely paralyzed. There is nowhere any muscular atrophy, tremor, or disturbance of any kind of sensibility, and there is no muscular tenderness. All the muscles of both legs respond decidedly and quickly to the faradic current. The difficulty of speech and respiration is so great that it does not seem possible that he can live twenty-four hours."

The patient died April 23d, five days after admission to the hospital, and twelve days after the beginning of loss of power in the legs.

"An autopsy was held eight hours after death. The spinal cord seemed normal, except that the lumbar portion seemed to be slightly edematous, and the outlines of the gray matter in this region seemed a little less clear than normal. The brain seemed normal, except that there was a somewhat increased amount of subarachnoid fluid over both parietal regions."

"A microscopical examination made by Dr. Van Gieson showed that there were a slight cerebral and spinal meningitis and infiltration of the walls of some of the veins of the spinal pia mater, and a degeneration (or neuritis) of some of the fibers of the anterior roots of the cauda equina, the nervous system in other respects being normal."

R. T. Williamson, M.D., has reported a case of acute anterior polio-myelitis in a young man, twenty-two years old, who died five weeks after the onset of the attack.[1] The case is as follows:

The patient, aged twenty-two years, consulted Dr. Pullon. When first seen he complained of a numb feeling in the right hand. The next day this had extended to the right leg and also to the left side. The right arm became paralyzed, then the left, and on the third day there was complete paralysis of both arms and legs. There was also pain in the back and slight pain in the limbs. The knee-jerks were absent; there was no anesthesia anywhere. The bladder and rectum were not affected. Rapid atrophy of the muscles of the limbs occurred after the first ten days of the illness. He remained in this paralyzed condition for about three weeks, then he began to improve. He regained slight power of movement in the toes, and there was slight return of power of movement in both arms. For financial reasons he was admitted as a patient at the Victoria Hospital, Burnley, England. The day following his admission he died very suddenly, before the hospital doctor could be called to see him. The entire duration of the disease was about five weeks. There was no anesthesia during the entire illness, and no affection of the bladder and rectum. The post-mortem examination was made by Dr. Woodyatt, the house-surgeon of the Burnley Hospital.

The spinal cord before section was normal in appearance, and so were the meninges. The cause of the sudden death was not discovered. Portions of the cervical, dorsal, and lumbar regions of the spinal cord, and pieces of the sciatic and ulnar nerves, were placed in bichromate of potash solution and sent to me for microscopical examination. To the naked eye the cord on section appeared normal, with the exception of the anterior horns of gray matter, which were of a slightly lighter color than the rest of the gray matter. The specimens were hardened in bichromate of potash solution and imbedded in celloidin. Transverse sections were cut and stained with logwood, anilin blue-black, osmic acid, Weigert's stain, etc. On microscopical examination of the spinal cord changes were found in each anterior horn of the gray matter in all three regions, cervical, dorsal, and lumbar, the most marked being those in the lumbar region, those in the dorsal, however, but slight. The changes occupied almost exactly the same position in all three regions, viz., the outer part of each anterior horn. The rest of the gray matter was not affected. In a transverse section of the lumbar region, stained with logwood, the outer half of each anterior horn of the gray matter was seen to be infiltrated by a mass of

[1] Medical Chronicle, September, 1890, page 454.

closely packed round cells. The cell-nuclei stained well with logwood. Under a low power the stained cell-nuclei were seen to be more numerous around the periphery of the patch than at the center. Also the center of the cell-infiltration had a tendency to break up and fall out of the sections.

A line drawn transversely across the cord through the central canal would roughly limit the post-anterior part of the patch of cell-infiltration, and a line drawn in the antero-posterior direction through the center of the anterior horn would give roughly the inner boundary of the patch. When examined with a high power this roundish patch of cell-infiltration was seen to be composed of small, round, nucleated cells, about the size of white blood-corpuscles, and of large, round, or oval nucleated cells. There were no real hemorrhages; only here and there two or three stray red corpuscles were seen, apparently not surrounded by any capillary wall. The perivascular sheaths of all the vessels were greatly distended with round cells. The small arteries passing from the surface of the cord to the anterior horns were dilated, and the lymph-sheaths distended with round cells. This was especially the case with the lateral median and lateral anterior arteries and their branches.

Nerve-cells. In the lumbar region, in specimens stained according to Weigert's method or with anilin blue-black, no nerve-cells could be detected in the outer half of each anterior horn—the region of the round-cell infiltration. This corresponded to the region of the antero-lateral and postero-lateral, and the central group of ganglion cells. At the inner part of each anterior horn—the region of the anterior, the internal, and the median groups—ganglion cells were seen. Some were of normal appearance, but most, especially those in the immediate neighborhood of the patch of round-cell infiltration, were shrunken and had lost their processes.

Anterior nerve-roots. Transverse section. In each nerve-bundle only a few nerve fibers were seen (stained black by Weigert's method), and instead of lying close together as in health they were widely separated from each other. Between these fibers was an infiltration of small round cells, well marked in some bundles of fibers, in some only slight; in others it was absent. Between the fibers, also, were many clear, unstained, more or less circular spaces, from which the nerve-fibers had entirely disappeared. At some places the nerve-fibers were represented by large masses of myelin (stained black).

Pieces of the anterior nerve-roots, teased out, showed the white substance of Schwann broken up into irregularly-shaped masses, or into round or oval globules. The nerve-nuclei were greatly increased in number. At some spots both white substance and axis cylinder had entirely disappeared and only the external sheath was left. The posterior nerve-roots on section presented a marked contrast to the anterior nerve-roots, appearing almost normal.

In the cervical region of the cord the changes were much the same and occurred in the same position, *i. e.*, the external part of the anterior horn; they were not so well marked, however, as in the lumbar region.

In other points the description given of the lumbar region applies to the cervical region. The pia mater was normal with the exception of very slight cell-infiltration and dilatation of the vessels of the anterior part just at the region of the anterior nerve-root.

Filum terminale. In the anterior horns the vessels were dilated. The perivascular sheaths of some of the dilated vessels contained a considerable number of round cells. This was most marked at the outer part of each horn. The nerve-cells were normal, except that at the outer part of the anterior horn one or two nerve-cells in each section could be detected, the processes of which were not quite so distinct as in health. In all four regions of the cord the changes were most marked just at the spot where the antero-lateral artery entered the gray matter, and the perivascular sheath of this artery was nearly always distended with round cells. Sections of the cord were stained for microörganisms according to Weigert's modification of Gram's method, but none were detected.

The ulnar nerve just above the wrist, both on section and in a teased specimen, showed many degenerated fibers similar to those of the anterior root. Other fibers, however, were normal.

The sciatic nerve. On transverse section many fibers had a normal appearance, but in each bundle here and there were small spaces from which the nerve-fibers had disappeared. A piece of the nerve, teased, showed some degenerated fibers. Others were normal. The smaller branches of the peripheral nerves and the medulla were not preserved for microscopical examination.

The clinical histories of the three cases detailed are in most respects alike; except that in Dr. Williamson's case the course of the disease was much longer, and there had been an attempt at retrogression of the paralysis, and there was also marked atrophy of the muscles. The post-mortem findings were all different. In Dr. Hun's case no changes could be found in the cord; in my own there was myelitis of the cervical portion of the cord, and in Dr. Williamson's there was marked degeneration of the anterior horns and some changes in the nerve-cells. It seems to me probable that had my patient lived long enough there would have been some retrogression of the paralysis, and changes in the muscles, both as to atrophy and in the electrical reactions, would have taken place.

I am inclined to believe that the condition of the cord found in my case was due to the early stage of the disease at which the patient died. Had he lived as long as did Dr. Williamson's patient, it is possible there would have been less myelitis, but degeneration in the anterior horns would have been conspicuous. I think it probable that in the early stages of poliomyelitis anterior there is a hyperemia or inflammation of the cord in the affected areas that is not confined to the anterior horns. After a few days, if the course of the disease tends toward recovery,

the general myelitis disappears and the degenerative changes in the anterior horns become pronounced. The large ganglion cells become the seat of special changes; they lose their processes, shrivel, and many disappear altogether. This seems likely from the clinical history of a case of this disease. There are at first associated with the motor paralysis certain subjective sensory disturbances in the way of formication, numbness, pain in the back and limbs, and discomfort on movement. In a few days the sensory phenomena disappear—in fact they seldom last more than a week; soon after the relief of the sensory symptoms retrogression of the paralysis takes place in those limbs that are destined to recover completely.

There have been very few autopsies in the early stages of polio-myelitis anterior, and some of those that have been reported will not bear close inspection For instance, the case reported by Charlewood Turner,[1] which is quoted by Gowers, Mary Putnam Jacobi, and others, does not seem to me to have been a case of polio-myelitis anterior:

The patient was a child two and one-half years of age. She had slipped in going down stairs, and had fallen on her back. For two weeks after this she had played about as usual. She then, one day, complained of being cold, became quite ill, and on the same day lost power in her legs. Three days later she could not use the arms. On admission to the London Hospital she was suffering from paralysis of all her limbs. She was anemic; there was fairly good muscular development. She lay on her side with her head thrown backward and the legs extended. The head could be rotated and bent backward, but could not be flexed without pain. There was no reflex action on tickling the soles of the feet, and *sensation over the legs was lost.* Sensation in the arms was perfect. The evacuations were passed involuntarily. Twelve days later the evacuations were still involuntary, but sensation was restored to the legs. The child died twenty-six days after admission and six weeks after the onset of the paralysis. At the autopsy there was found in the lumbar region of the cord hemorrhagic softening in the anterior horns, leaving a cavity.

Drummond's[2] case, the autopsy of which is the earliest on record in a case of polio-myelitis anterior, is incomplete, from the absence of clinical history:

A child, five years of age, died after an illness of six or seven hours, from respiratory paralysis. There is no mention made of loss of power in the legs or arms. At the post-mortem examination "the spinal cord in the region of the fourth and fifth cervical nerves showed undue redness in the anterior gray matter. The vessels running from the surface to the cornua were distended with blood. The microscope showed distention of capillaries and minute extravasations in the gray substance, swelling of the neuroglial elements and of the ganglion cells, which were granular with indistinct processes. The blood-vessels were distended with blood, forming a striking feature, not only in the anterior horns, but in the anterior white columns and middle and anterior portions of the posterior columns."

Drummond lays stress upon the fact that only a limited portion of the cord was affected, that is, in the region of the fourth and fifth cervical nerves, and that the inflammation extended beyond the limits of the anterior horns. The changes were found most abundantly in the anterior cornua, but they were also found in the antero-lateral white columns and in part of the posterior horns. "In fact, the anterior cornua were only the centers of inflamed areas, which reached considerably beyond their limits. It will therefore become a question whether the name proposed by Kussmaul, and adopted by the majority of writers, anterior polio-myelitis, is really an appropriate one."

Angel Money's[1] case also showed that the inflammation was not confined to the anterior horns:

The patient was a child, two years of age, that died sixteen weeks after the onset of an attack of paralysis involving both legs. The autopsy "showed changes in the lumbar enlargement, distention and thrombosis of the vessels, especially in the anterior horns. The cornua were infiltrated with leucocytes. There was absence of the large multipolar and other nerve-cells. The disease was not confined to the anterior horns, but spread forward, outward, and backward. The principal focus of mischief was certainly the center of the anterior horns."

Gowers has recently reported a case[2] of acute polio-myelitis associated with multiple neuritis. He refers to the two varieties of neuritis that are met with, the parenchymatous and the adventitious, using the latter term to designate the variety in which the connective-tissue elements were primarily affected. "Recent research," he says, "has suggested that there are two varieties of polio-myelitis, the primary affection in one being in the nerve-cells of the anterior horns, in the other in the basic substance of gray matter."

There has been an effort made of late to attribute Landry's paralysis to acute multiple neuritis, but the cases that have been cited present the features of multiple neuritis and not those of acute ascending paralysis.

The American Electro-therapeutic Association will hold its second annual session in New York during the first week of October, 1892. Dr. William James Morton, of New York, has been elected president of the Association.

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[1] Trans. Pathological Society of London, vol. xxx. p. 202.
[2] Brain, 1885, p. 15.

[1] Trans. Pathological Society of London, 1884.
[2] Clinical Society of London, and American Journ. Med. Sci. June, 1891.

A REVIEW OF SOME OF THE MORE IMPORTANT CONTRIBUTIONS TO OUR KNOWLEDGE UPON IMMUNITY AND INFECTION.

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FOR some time past the objective point in the work of many of the most prominent investigators in the field of bacteriology has been a closer acquaintance with the phenomena of infection and immunity. These studies have been directed not only toward the methods by which these conditions may be produced in susceptible animals, but efforts have been made to determine the alterations that take place in the tissues of these animals, coincidently with the establishment of the conditions.

It is proposed in this paper to review the principal experimental work that has been contributed to the subjects of immunity and infection during the past few years and see in how far the results accord with or refute the hypotheses that have been advanced for the explanation of these conditions.

Until the year 1888 there existed four different doctrines by which the condition of acquired immunity against infection could be accounted for. The first of these theories originated with Chaveau.[1] It suggests that the immunity commonly seen to exist in animals that had passed through an attack of infection against a subsequent outbreak of the same malady, and likewise the immunity that had been produced artificially, exists by virtue of some bacterial product that has been retained in the tissues of those animals, and that by its presence prevents the development of the same organisms when they subsequently gain access to the body. This is the so-called "retention hypothesis."

On the other hand, Pasteur[2] and certain of his pupils believed that the resistance frequently afforded to the tissues by an attack of infection, or following upon vaccination against infection, was due rather to an abstraction *from* the tissues, by the organisms that were concerned in the primary attack, of a something that is necessary to the growth of the organism should it gain entrance to the body at any subsequent time. This view is known as the "exhaustion hypothesis."

In 1884, Metschnikoff[3] published the first of a series of observations upon the relation that is seen to exist between certain of the mesodermal cells of the lower animals and insoluble particles that may be present in the tissues of these animals. The outcome of these investigations was the establishment of his well-known doctrine of phagocytosis, the principle of which is that the wandering cells of the animal organism, the leucocytes, possess the property of taking up, rendering inert, and digesting microörganisms with which they may come in contact in the tissues. Metschnikoff believed that in this way immunity against infection may in many cases be explained. He believed that susceptibility to, or immunity against infection was essentially a matter between the invading bacteria on the one hand and the leucocytes of the tissues on the other. The success or failure of the leucocytes in protecting the animal against infection depends, according to this author, entirely upon the efficiency of the means possessed by them for destroying bacteria. When these means are of sufficient vigor to bring about the death of the bacteria, the tissues are victorious, but when the poisons generated by the microörganisms are virulent enough to arrest the phagocytic action of the leucocytes, then the tissues succumb and infection results.

Another explanation for the immunity as acquired by the tissues of the animal organism is that advocated by Buchner.[1] Buchner suggests that in the primary infection from which the animal may have recovered there has been produced a "reactive change" in the integral cells of the body that enables them to protect themselves against subsequent inroads of the same organism.

In 1888 there appeared from the laboratory of Flügge, in Breslau, a series of contributions that had for their object the critical review of the four hypotheses for immunity that were in existence at that time.

These experiments were of the utmost importance and gave much of the impulse to most of the work upon this obscure problem that has appeared since their publication.

The outcome of these experiments, as far as they reached, was to cast a doubt upon the accuracy of the evidence upon which the existing hypotheses were based; and indeed, from their combined results, led to the conclusion that the production of immunity follows no simple or constant course, but rather that it is dependent upon a number of factors, acting singly or together.

Bearing upon the hypothesis of retention, Sirotinin[2] found that, in so far as culture experiments were concerned, the only products of growth of the bacteria that were in any way inimical to their further development were substances that gave rise

[1] Chaveau: Comptes rendus, etc., No. 91, July, 1880.
[2] Pasteur: Bull. de l'Acad. de Méd., 1880.
[3] Metschnikoff: Arbeiten aus dem zoölogischen Institut der Universität Wien, 1884, Bd. v, S. 111; Fortschritte der Med., 1884, Bd. ii; Annales de l'Institut Pasteur, 1887, tome i., No. 7; Virchow's Arch., Bd. cvii.

[1] Buchner: Eine neue Theorie über Erzielung von Immunität gegen Infectionskrankheiten. München, 1883.
[2] Sirotinin: Zeitschrift für Hygiene, Bd. iv., 1888.

to alterations in the reaction of the medium in which they were growing: acids or alkalies produced by the bacteria themselves. So long as the organisms were not actually dead from exposure to these substances, correction of the abnormal reaction was followed by a further development of the organisms. Sirotinin points out also that the products of the growth of bacteria, so long as they are maintained at a neutral or only very slightly alkaline reaction, serve very well as a medium upon which to cultivate again the same organism, providing the nutritive elements have not been entirely exhausted. Sirotinin remarks that, if in such a concentrated form as we find the life-products of bacteria in the medium in which they are growing, no inhibitory compounds beyond acids and alkalies are to be detected, it is hardly probable that they are produced in the tissues of the living animal and retained there to a degree sufficient to prevent the growth of bacteria that may subsequently gain entrance to these tissues, after the disappearance of the organisms concerned in the primary invasion. On the other hand, Salmon and Smith[1], Roux and Chamberland,[2] and others, had demonstrated that a sort of immunity against certain forms of infection may be afforded to susceptible animals by the injection into their tissues of the products of the growth of organisms that may themselves produce fatal results when present in the animal body. In the light of subsequent experiments, however, the interpretation of this phenomenon is not that claimed by the supporters of this hypothesis.

Upon a closer study of these nutritive products of bacteria, Hankin,[3] and Brieger and Fränkel,[4] have found that there exist in certain instances, bodies of a proteid nature (albumoses, Hankin; toxalbumins, Brieger and Fränkel) that are highly poisonous in their action upon the animal body. These substances, if isolated and introduced into the tissues of susceptible animals in sufficient quantity, give rise to structural alterations in the tissues of that animal quite analogous to those following the introduction of the living organisms by which they were produced. If, however, they at first be introduced in very small amounts and the doses slowly increased, not only will no marked systemic reaction appear, but the animal will acquire a condition of resistance to the subsequent pathogenic action of the organisms themselves. That this condition, which has the appearance of a simple tolerance, is not of this nature, has been brought out by the work of Klemperer and Klemperer shortly to be described.

As to the exhaustion hypothesis of Pasteur there is as yet no evidence whatever for its support. The work of Bitter,[1] which was undertaken with the view of determining if, in the process of artificial and natural immunity, there occurred such an exhaustion from the tissues of material necessary to the growth of bacteria that might gain entrance to them at some later date, gave only negative results. The flesh of animals in which immunity had been produced contained all the elements necessary for the growth and nutrition of the bacteria against which the animals had been protected, just as did the flesh of non-vaccinated animals.

Has the doctrine of phagocytosis, as advanced by Metschnikoff, stood the test of experimental criticism? From the evidence now in our possession this question must be answered in the negative. The first severe blow that this theory received was given by Nuttall,[2] in his work upon the antibacterial action of the animal economy. In these experiments Nuttall showed positively that the part played by the leucocytes was not at all essential to the destruction of virulent bacteria in the blood of animals, but that the serum of the blood, when quite free from cellular elements, possessed this power to a degree equal to that of the blood when all the constituent parts were present. In the blood, as such, phagocytosis could be noticed, but as a rule, the bacteria presented evidence of having undergone degenerative changes before they had been taken up by the wandering cells. Contrary to the notions in existence at the time, Traube and Gscheidlen,[3] as far back as 1874, demonstrated that considerable quantities of septic material could be injected into the circulating blood without apparently any effect upon the animal. As a result of these experiments the question that naturally presented itself was: Does the animal organism possess the power of rendering septic organisms inert, and if so, to what extent? Their further work showed that appreciable numbers of living bacteria could be injected into the circulation of warm-blooded animals without producing any noticeable effect. Particularly was this the case with dogs. If they injected into the circulation of a dog as much as 1.5 c.c. of decomposing fluid, the blood drawn from the animal after from twenty-four to forty-eight hours showed no tendency to decompose, though it was kept under observation for a long time. They believed this power of rendering living organisms

[1] Salmon and Smith: Proc. of the Biol. Soc. Washington, vol. iii. Feb. 22, 1886.

[2] Roux and Chamberland: Annales de l'Institut Pasteur, t. i., ii., 1888 and 1889.

[3] Hankin; British Med. Journal, No. 1541, July 12, 1890, and Feb. 28, 1891.

[4] Brieger und Fränkel; Berliner klin. Wochenschr., 1890, Bd. xxvii.

[1] Bitter; Zeitschrift für Hygiene, Bd. iv., 1888.

[2] Nuttall: Zeitschrift für Hygiene, Bd. iv., 1888.

[3] Traube und Gscheidlen: Jahresbericht der Schlesischen Ges. für Cultur, 1874; Jahr lii. p. 179.

inert to be possessed by the circulating blood only to a limited degree. After the injection of much larger amounts of the putrid fluid into the blood of the animal, death usually ensued in from twenty-four to forty-eight hours. The blood drawn from the animal just before death contained the living bacteria of putrefaction, and underwent decomposition. They attribute the phenomenon to the action of the "ozonized oxygen of the corpuscles of the blood."

In 1882 Rauschenbach[1] demonstrated that in the process of coagulation, fibrin was formed; not as a specific product of the action of the colorless elements of the blood alone, but as the result of the combined action between all animal protoplasm and healthy blood-plasma, and that in the process there was always a disintegration of the leucocytes that were present. In 1884 Groth[2] demonstrated further that such a disintegration of leucocytes occurred in normal, circulating blood, though here it was not accompanied by coagulation. The results of these observations suggested the question: Does such a disintegration occur when vegetable protoplasm is introduced into the blood? For the purpose of answering this question, Grohmann, a pupil of Alexander Schmidt,[3] undertook to study the action of the circulating blood upon the vegetable protoplasm of the bacteria.

He noticed that the clotting of the blood of the horse was very much accelerated by the addition to it of certain of the lower organisms, and that at the same time the development of the organisms was checked, and in the case of the pathogenic varieties their virulence was diminished. This was particularly the case when the anthrax bacillus was employed.

Grohmann seems to have appreciated the significance of this observation, though he took no steps to study it more closely. He remarks that the system probably possesses, in the plasma of the blood, a body having disinfectant properties (*loc. cit.*, pp. 6 and 33). This work, however, was not conducted according to the more exact methods of modern bacteriological research, so that the actual demonstration of this phenomenon must be attributed to Nuttall.

Since the publication of Nuttall's work his results have received confirmation from all sides. Fodor,[4] Buchner,[1] Lubarsch,[2] Nissen,[3] Stern,[4] Prudden,[5] and others have continued in the same line, and have all made practically the same observations.

Buchner undertook a closer acquaintance with this phenomenon. His studies were directed to the active element by virtue of which the serum possessed this property. He demonstrated that the serum was robbed of this power by an exposure to a temperature of 55° C. for half an hour; that its efficacy as a germicide was not diminished by alternate freezing and thawing; that by dialysis with distilled water, or by extreme dilution with distilled water, its germicidal activity was diminished, or completely checked; but that an equal dilution could be made if sodium chloride solutions (0.6–0.7 per cent.) were substituted for the distilled water, without the antibacterial action of the serum losing any of its power. From this he concluded that the active element in this phenomenon is a living albumin, an essential constituent of which is sodium chloride, and which, when robbed of this salt, either by dialysis or dilution, becomes inert in its behavior toward bacteria. He found, moreover, that the activity of the serum alone against bacteria was greater than when the cellular elements of the blood were present. This he explains by the assumption that in the serum alone the germicidal element predominates, whereas in the blood, as such, outside of the body, it is still present, but is overbalanced by the nutrition offered by the disintegrated cellular elements, so that here the nutritive element is most conspicuous, and the destructive activity toward the bacteria is not so marked.

A closer study of the nature of this germicidal element in the body of animals has been made by Martin and Hankin,[6] who have isolated from the spleen and lymphatic glands a body—a globulin—which in solution possesses a germicidal property that corresponds in value to that seen in the normal blood-serum.

Halliburton[7] believes this body to be identical with fibrin-ferment because of the clotting that it brings about in the blood. Martin and Hankin oppose this view on the ground that fibrin-ferment possesses no germicidal properties, and further, that when this globulin is exposed to an extract made from the esophageal glands of the medical leech, it is not decomposed, as Haycraft[8] claims that fibrin-ferment is.

[1] Rauschenbach: "Ueber die Wechselwirkung zwischen Protoplasma und Blutplasma." Dissertation, Dorpat, 1882.

[2] Groth: "Ueber die Schicksale der farblosen Elemente im kreisenden Blut." Dissertation, Dorpat, 1884.

[3] Grohmann: "Ueber die Einwirkung des zellenfreien Blutplasma auf einige pflanzliche Mikroörganismen." Dissertation, Dorpat, 1884.

[4] Fodor: Centr. f. Bakteriologie u. Parasitenkunde, 1890, Bd. vii., No. 24.

[1] Buchner: Archiv für Hygiene, 1890, Bd. x. Hefte 1 and 2.

[2] Lubarsch: Centr. f. Bakt. u. Parasitenkunde, 1889, Bd. vi. No. 18.

[3] Nissen: Zeitschr. für Hygiene, Bd. vi. Heft 3, 1889.

[4] Stern: Zeitschr. für klin. Med., Bd. viii. Hefte 1 and 2, 1890.

[5] Prudden: N. Y. Med. Record, 1890, vol. xxxvii. pp. 85, 86.

[6] Martin and Hankin: British Medical Journal, May 31, 1890.

[7] Halliburton: Centr. f. Bakt. u. Parasitenkunde, 1889, Bd. v. p. 817, and Bd. vi. p. 1.

[8] Haycraft: Proc. Royal Soc. London, vol. xxxvi. p. 498.

Similar germicidal, ferment-like globulins have been isolated from the blood by Ogata,[1] and in their studies upon tetanus Tizzani and Cattani[2] also found a body that was antagonistic to the poison produced by the organism of this disease.

Hankin believes the globulins upon which he has been working and the albuminoid bodies studied by Buchner to be identical. The most interesting, and, in the light of work that has appeared since, the most important, of Hankin's observations was not that of the power of these globulins to destroy the vitality of living organisms, but that of the relation that they bear to the poisonous, proteid products of these organisms. For example, if the poisonous products of virulent anthrax bacilli be isolated and exposed to the globulin extracted from the normal tissues, the experiments of Hankin showed a directly destructive action on the part of the bacterial products. He found that the amount of poisonous albumin that was produced by the attenuated anthrax bacilli that are employed as vaccines against the inroads of the virulent organisms was much less than that produced by organisms possessing full virulence, and he suggests that perhaps the protective influence of the inoculations that are practised by introducing into the animal the organisms that have been attenuated in virulence is due to a gradual tolerance acquired by the cells of the tissues to the action of the poison when produced in these small quantities; in the same way that a tolerance was acquired by the tissues for the venom of the rattlesnake in the experiments of Sewall,[3] and as is seen to follow the injection into the tissues of small quantities of hemialbumose, which in large quantities rapidly proves fatal.

Hankin concludes from his experiments that in certain cases the contest between infectious organisms and the animal body is conducted on the part of the invaders by means of the poisonous proteids that they produce acting in direct antagonism to the means of resistance possessed by the normal cells of the tissues. In the event of the bacteria gaining the ascendency, the normal resistance of the tissues has been destroyed by the bacterial products, whereas if infection fails to occur, then the bacteria have been killed before the poisonous albumins were produced in quantities sufficient to check the normal resistance that the tissues are seen to possess.

In their studies upon diphtheria, Brieger and Fränkel[4] isolated from among the products of growth of the organism concerned in the etiology of this disease a proteid body, a toxalbumin, as it is called by them, which possesses characteristics similar in nature to the albumoses isolated by Hankin. In his subsequent work Fränkel[1] believes himself to have demonstrated the presence of two proteids as products of growth of the bacillus of diphtheria. These bodies are opposed in their action upon susceptible animals: the one being a poisonous proteid body that is destroyed by an exposure to from 55° to 60° C. for one hour; the other, likewise a proteid body, but which is devoid of poisonous properties and is destroyed only by exposure to higher temperatures: from 65° to 70° C. This latter proteid, when introduced into the tissues of susceptible animals, possesses the power of affording immunity against diphtheria. It loses this power when heated to a temperature of 100° C. Our acquantance with these products is as yet not sufficiently intimate to discuss with profit the view held by Fränkel as to the existence of these two physiologically distinct proteids together, as products of the growth of this organism, but his method of separating them does not appear to be all that could be desired. He obtains, from the bacterial products containing the two albumins together, the one that possesses the protective power, by subjecting them to a temperature sufficiently high to completely destroy the poisonous body, but not high enough to render inert the other. That is to say, the body that he obtains after an exposure of the mixture to a temperature of from 65° to 70° C., and which is seen to afford immunity against diphtheria to guinea-pigs, he claims to be entirely distinct from the poisonous proteid believed by him to be destroyed before this temperature is reached. It does not seem impossible that, instead of the poisonous body having been destroyed by the high temperature, its physiological activity was simply modified by it, resulting in the appearance of the substance that is now without poisonous peculiarities, but which has the characteristic referred to—of affording immunity.

An epoch may be said to have been reached with the work of Behring and Kitasato[2] upon the production of immunity to tetanus. In their studies upon the blood of animals subjected to these experiments it was found that it was not only possible to render animals immune to this disease (the method has not yet been published), but that the serum of the blood of these immuned animals is seen to afford immunity when injected into the peritoneal cavity of other animals that have not been so protected; and moreover, that this serum possesses curative powers over the disease after it

[1] Ogata: Centr. f. Bakt. u. Parasitenkunde, 1891, Bd. ix. p. 599.
[2] Tizzani und Cattani: Centr. f. Bakt. u. Parasitenkunde, 1891, Bd. ix. p. 685.
[3] Sewall: Journal of Physiology, 1887, vol. viii. p. 203.
[4] Loc. cit.

[1] Fränkel (C.): Berliner klin. Wochenschr., 1890, Bd. xxvii. p. 1133–1135.
[2] Behring und Kitasato: Deutsche med. Wochenschr., 1890, Bd. xvi. p. 1113.

had, in some cases, been in progress for a time. They found, further, that the serum of animals that had been rendered immune to tetanus, when brought in contact with the poison of tetanus, completely destroyed its poisonous properties, and that the serum from animals or from human beings who do not possess immunity to this disease has no such power.

Perhaps of greatest importance as a contribution to our knowledge upon infection and immunity is the work of Klemperer and Klemperer.[1] Their experiments bore entirely upon the nature of the infection in acute fibrinous pneumonia, and have shed much light upon some of the obscure features of that disease. They found but little difficulty in affording immunity to animals that are otherwise susceptible to the pathogenic action of the organisms concerned in the production of this disease,[2] by the introduction into their tissues of the products of growth of the organisms from which the latter had been separated. The immunity thus produced is seen in some cases to last as long as six months; again, it is seen to disappear suddenly in a way not to be explained. It was seen in one case to be hereditary.

The energy of the substance that has the power of affording immunity was seen to be very much increased by subjecting it to temperatures somewhat higher than that at which it was produced by the bacteria: 37.5° C. Klemperer and Klemperer found that if this substance was heated to a temperature of from 41° to 42° C. for three or four days, or to 60° C. for from one to two hours, intravenous injection was followed by complete immunity in from three to four days; whereas, if the unwarmed material was used, immunity did not appear until fourteen days, and then only after the employment of relatively large amounts. Moreover, when the previously-heated products are introduced into the circulation of the animal, the systemic reaction is of but short duration, but if the unwarmed substance is employed, immunity is manifest only after the appearance of considerable elevation of temperature, which lasts for a long time. In explanation of these differences, they suggest that, in the latter case, the high fever that is seen to occur in the animal may serve to substitute the warming to which the product had not previously been subjected, and which is necessary before the products of the bacteria are in a position to bring about the condition of immunity. They claim that the bacterial products employed in producing immunity in this case are not, in actuality, the immunity-affording substance, but that they are only the agents that bring about in the tissues of the animals alterations that result in the production of *another body* that protects the animal. In support of this, their argument is that several days are necessary for the production of immunity by the introduction into the animal of the bacterial products; whereas, if the blood-serum of this animal, which is now protected, be introduced into the circulation of another animal, no such delay is seen, but instead, the animal is forthwith protected. In the former case the actual protecting body must first be manufactured by the tissues; whereas, in the second it is already prepared, and is introduced as such into the second animal.

The serum of immuned animals is not only capable of rendering other animals immune, but moreover possesses curative powers when the disease is already in progress. The serum of immuned animals, when injected into the circulation of animals in which this form of infection was in progress, and in which there was a body-temperature of from 40.4° to 41° C., reduced this temperature to normal (37.5° C.) in twelve consecutive experiments during the first twenty-four hours following its employment.

Klemperer and Klemperer explain that the crisis seen in pneumonia in human beings occurs at the moment when the poisonous products, which are manufactured by the bacteria located in the lungs, are present in the circulation in amounts sufficient to call forth in the tissues the reactive change that results in the production of the antidotal substance that has the power of rendering the poisons inert.

At the time of the crisis in pneumonia the bacteria themselves are in no way affected. They remain in the lungs, and can be detected, in full vigor and virulence, in the sputum of patients a long time after the disease is cured. They have lost none of their power of producing poisonous products, and still possess their original pathogenic relations toward susceptible animals. It is only after the crisis that their poisons are neutralized by this antidotal proteid that has been eliminated by the cells of the tissues, and as this occurs the systemic manifestations gradually disappear. Klemperer and Klemperer isolated from the cultures of the diplococcus of pneumonia a proteid body that is the agent concerned in producing the tissue-changes that result in the formation of the protecting substance. They likewise isolated from the serum of immuned animals a proteid that possesses the same powers as the serum itself—of affording immunity and of curing the disease. The poisonous bacterial product they propose to call pneumotoxine; the protecting body, anti-pneumotoxine.

[1] Klemperer und Klemperer: Berliner klin. Wochenschr., 1891, Nos. 34 and 35.

[2] Animals do not, as a rule, present the pneumonic changes seen in human beings. The introduction of the diplococcus of pneumonia into their tissues results, in the case of susceptible animals, in the production of septicemia.

After obtaining these results upon the lower animals they directed their attention to human beings, and found that by the subcutaneous application of the serum of immuned animals to patients suffering from acute fibrinous pneumonia the results were in the main promising. They found that while healthy individuals and those suffering from other forms of disease presented no systemic reaction after the injection of the serum, in six cases of pneumonia in which the serum was employed there was a remarkable fall of temperature and slowing of the pulse within the first twelve hours after it was injected. In four of these cases the temperature fell to normal, but rose again after six hours. In two cases it fell to normal, and remained at that point.

It would appear from the results obtained by these two observers that immunity against this disease, and the processes concerned in its cure, were of a chemical nature, the active poisons of the organisms, the pneumotoxines, being neutralized by the tissue-products, the anti-pneumotoxines.

Results upon animals in general analogous to those of Klemperer and Klemperer have been obtained by Emmerich and Fowitzky.[1]

In the light of these experiments the hypothesis advanced by Buchner, that immunity was to be explained by reactive changes in the integral cells of the body, receives considerable support. Bearing also upon this point, the experiments of Bitter (*loc. cit.*) showed that, in the protective inoculations against anthrax, the vaccines that are employed do not disseminate themselves through the body, as is the case when the virulent organisms are introduced, but remain at the point of inoculation, and from this point, produce, by the absorption of their chemical products, the systemic changes through which the animal is protected against infection by the virulent organisms. The experiments of Emmerich and Mattei[2] upon the disease known as Schweine-rothlauf offer further support to this doctrine.

More significant, perhaps, in this connection are the results of Emmerich and Mattei,[3] and of Powlowski[4] obtained in their work upon anthrax. Emmerich and Mattei claim to have produced in the tissues of the rabbit, by the subcutaneous and intravenous injection of cultures of the streptococcus of erysipelas, a condition of resistance that enabled the animal to withstand subsequent subcutaneous inoculation with virulent anthrax bacilli. This, they claim, is not due to any antagonism between the organisms themselves, for in culture-experiments the two organisms grew well together, without any alteration in their pathogenic properties, but rather to the production of a tissue-change by which resistance to the inroads of the virulent bacilli was established. Emmerich and Mattei interpret this "reactive tissue-change" as a power acquired by the integral cells of the body, of eliminating a product that is detrimental to the pathogenic activity of the anthrax bacilli. Powlowsky (*loc. cit.*), who obtained similar results after the introduction into the animal body of cultures of the bacillus prodigiosus, of staphylococcus pyogenes aureus and of the diplococcus of pneumonia, believes them to be due to a more energetic phagocytosis that these cultures of non-pathogenic organisms had induced. They prepared, according to his views, the phagocytes for the more difficult task of rendering inert the disease-producing bacteria that were to be introduced into the tissues subsequently.

This review by no means embraces all the work that has been done upon this important subject, but the investigations that have been cited will serve to indicate the direction in which these studies have been conducted and furnish a conception of the phenomena of infection and immunity as reviewed from the present experimental standpoint.

From these experiments we may conclude:

1. That, of the hypotheses that exist for the explanation of immunity, that which assumes acquired immunity to be due to reactive changes on the part of the tissues has received the greatest support.

2. That immunity is most frequently seen to follow the introduction into the body of the products of growth of bacteria that in some way or other have been modified. This modification may be artificially produced from the products of virulent organisms and then introduced into the tissues of the animal; or the organisms themselves may be so treated that they are no longer virulent, so that when introduced into the body of the animal they eliminate poisons of a much less vigorous nature than is the case when they possess their full virulence.

3. That immunity following the introduction of bacterial products into the tissues is not the result of the permanent presence of these substances *per se* in the tissues, or to a tolerance acquired by the tissues to the poison, but is probably due to the formation in the tissues of another body that acts as an antidote to the poisonous substance.

4. That this protecting proteid that is eliminated by the cells of the tissues need not of necessity be antagonistic to the life of the organisms themselves, but in some cases must be looked upon more as an antidote to their poisonous products.

5. That in the serum of the normal circulating

[1] Emmerich und Fowitzky: Münch. med. Wochenschr., 1891, No. 32.

[2] Emmerich und Mattei: Fortschritte der Medizin, 1888, No. 19.

[3] Ibid., 1887, p. 653.

[4] Powlowski: Virchow's Arch., Bd. 108, p. 494.

blood of many animals there exists a body that is capable, outside of the body, of rendering inert bacteria that, if introduced into the body of the animal, would prove infective.

6. That, in many instances, infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter through the agency of proteid bodies normally present in their integral cells.

7. That when infection occurs it may be explained either by the excess of vigor of the bacterial products over the antidotal or protective proteids eliminated by the tissues, or to some cause that has interfered with the normal activity and production of these bodies by the tissues.

8. That phagocytosis, though frequently seen, is not essential to the existence of immunity, but is more probably a secondary process; the bacteria being taken up by the leucocytes only after having been rendered inert through the normal germicidal activity of the serum of the blood and other fluids of the body.

CLINICAL MEMORANDA.

A CASE OF PUERPERAL ECLAMPSIA.

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THE following case of puerperal eclampsia recently treated in the Pennsylvania Hospital during the service of Dr. Morris J. Lewis possesses some interest on account of the typical character of the uremia occurring after childbirth, and also in regard to the treatment instituted, which included the forcible injection of fluids, with the consequent flushing of the system of the poisonous elements retained. This seemed to contribute as much to the favorable result in the case as any other remedy used:

Ella P., a negress, twenty-three years of age, was brought to the hospital July 10th, at 11 A.M., in a semi-conscious condition, due to evident uremic poisoning. The history obtained from her friends and the physician who secured her admission was that she had fallen into labor at full term on the night previously and had been delivered of living twins at 1.40 on the morning of admission; she had seemed in good condition until 6.30 A.M., when she had the first convulsion, followed almost immediately by coma. At 7.30 A.M., between 9 and 10 A.M., and at 11.40 A.M., three subsequent convulsions occurred. She had never before borne children, but had had two miscarriages; evidences of previous kidney disease were wanting, and she is said to have enjoyed good health previously to this attack. Her friends, on close questioning, thought that she had not passed any urine for a considerable period before labor—just how long they were unable to state—but they were certain that her bowels had not moved for several days previously to her admission.

When admitted her temperature was 98⅘°; pulse 140, with high tension; respiration per minute 30, and regular; she was in a semi-comatose condition, occasionally rousing when disturbed, and giving vent to terrific yells, biting at the nurses, and expectorating thick, tenacious, blood-tinged saliva; her feet and legs were moderately edematous, her face slightly swollen, her pupils somewhat dilated, and her whole condition one of deepening uremic hebetude.

The lungs were normal, heart-sounds booming, with marked accentuation of the second sound at both the aortic and pulmonary cartilages. The uterus was well down in the pelvis and strongly contracted; there was no excessive lochial discharge; the perineum had, however, received a tear extending back nearly to the sphincter ani.

As soon as possible she was catheterized, and the contents of the bladder withdrawn, amounting to three drams of dark, smoky urine, which on boiling showed about 50 per cent. of albumin by bulk, and under the microscope presented numerous broad and narrow hyaline and blood casts, with some slightly granular, and blood in considerable quantity.

An enema containing chloral, gr. xx, and sodium bromide, gr. xxx, was immediately ordered, but was not retained, nor was a subsequent one retained that was given shortly afterward. This same dose was administered by the mouth, but the patient could not be made to swallow, so that sedative medication seemed impossible. The median cephalic vein was then opened, the bleeding being continued until the hard, rapid, tense pulse was replaced by a softer, slower one, the amount of blood taken being about nine ounces. At this juncture the use of the nasal tube suggested itself, and a soft-rubber catheter was procured and passed through the nose into the stomach, first attaching it to a small stomach-pump. The chloral and bromide were by this means forced into the stomach, together with about a quart of water. A steam-bath was immediately afterward prepared, and an endeavor was made to provoke sweating; this, however, was not accomplished until pilocarpine, gr. ⅛, was given hypodermatically, which was followed by moderate diaphoresis. The adverse criticisms recently made on the use of pilocarpine in cases of puerperal eclampsia were fully borne in mind, and the lungs were carefully watched for pulmonary hypersecretion, but as this did not occur, and as the drug acted favorably, it was again employed, always, however, in conjunction with the application of external heat.

At 12.40 P.M. the patient had a typical convulsion, lasting about one and a half minutes, commencing with a wild look in the eyes, which were rolled up and toward the left, then rapidly followed by tonic twitching of the hands, face, and legs, in the order named, and finally a clonic convulsion of the whole body. Respiration was in gasps and the lips were covered with bloody froth. Chloroform was used in this and the attacks that followed, and seemed to lessen their severity as well as shorten their duration. Croton oil was placed upon the tongue, and as it was ineffectual, repeated; elaterium was also used, but

the bowels did not move. At 4 P.M. and at 6 P.M. steam-baths with pilocarpine were given with moderate results; at 5.30 P.M. another dose of chloral and bromide was given in the same quantity by the forced injection through the nasal tube, and, as before, followed by water until the stomach was filled. Severe convulsions occurred at 4.54 P.M., 6.03 P.M., and 6.11 P.M., the one preceding the last being especially violent and lasting nearly four minutes. At 9.30 P.M. the woman was restless and seemed on the verge of another convulsion; chloral and bromide with water were repeated, and dry hot-air was used, causing more sweating than the steam-bath. During the night her condition was very serious; she was in a continuous stupor, from which it was impossible to rouse her; her pulse ran between 140 and 160; her temperature was about 103°, and her breathing was Cheyne-Stokes in character. At 3 A.M. the same treatment was repeated, and she responded by sweating profusely.

Throughout the next day, the 11th, the comatose condition continued; the pulse, however, was a little stronger and respiration was more regular. Every fourth hour the patient was given about one and a half pints of either milk or water by forced injection through the tube, to which was added cream-of-tartar water. Elaterium was given during the day, and toward evening she had three large watery stools. Sweating with dry hot-air was again resorted to, the result being satisfactory. Up to twenty-four hours after admission the urine passed amounted to only nine ounces, which contained about 40 per cent. of albumin by bulk, with blood and casts in abundance.

The note of the 12th was as follows: "Last night she had very profuse diuresis and many bowel-movements. The forced milk-and-water treatment was continued. Toward morning she seemed more conscious, and during the day has grown more rational. Had her last dose of milk at 12 noon, and since then has taken fluids naturally. Has had five watery dejections to-day, and has passed during the twenty-four hours ending at 11 A.M. about eighty ounces of urine (estimated). At 8 P.M., temperature 99⅘°, pulse 98, respiration 20; is perfectly conscious, but very irritable and in bad temper."

Convalescence was satisfactory; all edema disappeared within two or three days; the anemia, which was at first marked, rapidly improved with iron, and the albumin in the urine gradually diminished, except during an evacuation lasting four days, which was marked by headache and slight nausea, until on her discharge, August 3d, there was only a faint trace. An examination of the urine made August 1st gave the following result: Sp. gr. 1014, feebly acid, clear and limpid, faint trace of albumin; very few epithelial and pale hyaline casts, some slightly granular; no blood.

The result in this case will obviously point to the advantages in cases that cannot or will not swallow of administering by tube medicines and fluids in quantity. The ease of administration by means of a large, soft catheter attached to an ordinary syringe or funnel would place the method, which seems to commend itself by its apparent rationality, within the reach of all practitioners.

I am indebted to Dr. Lewis for his kind permission to publish this report.

CASE OF DOUBLE CLUB-FOOT, DOUBLE CLUB-HAND AND MULTIPLE DEFORMITIES.[1]

REPORTED BY WM. E. WIRT, A.M., M.D., PH.D.,
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I SEE by the reports of the transactions of the New York Academy of Medicine, that Dr. Gibney has reported a case similar to mine—one that was under treatment at the Hospital for Ruptured and Crippled, New York City, while I was house-surgeon of that institution.

The case I report is of even a more severe grade of deformity than the one reported by Dr. Gibney.

The child—a boy—was born in August, 1890, and was brought to my clinic, March 17, 1891, being then seven months of age. He presented a condition of double club-foot, double club-hand, imperfect development, and imperfect action of both ankles, knees, hips, shoulders, elbows, and wrists. In the hands there were contractures of all the fingers—so that in this child there was not a perfect-acting joint in either the upper or lower extremities except in the phalanges of the feet. The feet were in extreme equino-varus. The knee-joints and patellæ were rudimentary and the latter displaced externally. The ends of the bones were smaller than they should be and were irregular. The legs were held extended and could only be flexed through an angle of 30 degrees; the latter part of this flexion caused a crackling noise distinctly audible. The ligaments were lax, permitting nearly as much lateral motion as flexion. There was some knock-knee present. The thighs were held flexed and rotated outward. By force they could be flexed to 110 degrees and extended to 165 degrees. Rotation was limited to one-half the normal arc. Abduction was permitted to but a small extent; adduction was somewhat greater. The obstruction to motion in the lower extremities seemed bony and ligamentous and not muscular or tendinous. The right limb was shorter than the left and on the right side the trochanter major was three-fourths of an inch above Nélaton's line. There was evidently a congenital dislocation of the hip on the right side. At the shoulder and elbows the condition was very similar to that at the hips and knees, with the difference that there was more motion permitted in the upper extremities and the obstruction was more of a muscular character and less bony. The pectoral muscles were strongly contracted. There was marked double club-hand, with imperfectly developed wrists. The hands and fingers were flexed with adduction at the wrists. The flexion in the fingers was due to contracture of the palmar fascia.

We have very little to account for this condition of the child. The mother and friends state that during the fourth month of pregnancy she had a very severe fright caused by a disturbance on the street in front of her home during the middle of the night. She also states that the child was much more quiet *in utero* than her other children were. Her relatives are healthy and none are deformed. She has one other child that is perfectly healthy. The presentation at birth was the breech; the

[1] Read at the meeting of the American Orthopedic Association, in Washington, D. C., September, 1891.

labor was tedious and there was suspended animation of the infant. The head was large, unsymmetrical, and had a depression on one side. The child was very much emaciated and seemed in great pain for four months (thought to be in the head by the parents and attending physician), during which time it was very irritable. Even washing the feet or trimming the nails caused it to cry lustily. From the fourth to the seventh month the child picked up very much, but at seven months, though moderately plump, it had a very markedly undeveloped muscular system. It was unable to sit up unsupported, though there was some voluntary motion of the trunk. In the extremities the power seemed limited to a slight motion of the toes.

Recently I visited this patient and found much improvement. The child is able to sit up and endeavors to play, voluntarily moving its lower extremities at the hip, and the upper extremities in slight degree at each joint. At the knees there is a gain of 30 degrees of flexion; at the thighs there is a gain of 10 degrees of extension and 15 degrees of flexion. In the upper extremities there is the same proportionate gain.

The intelligence of the infant, though below par, has improved, and it is now, at thirteen months of age, about as bright as a baby of seven months.

The feet and hands are about in the same condition as on the first examination, the mother in the meantime not permitting any treatment.

The sensitiveness and irritation in the extremities have very much decreased, so that washing and handling the feet seem to cause very little annoyance. From being extremely emaciated at birth the child has grown to be quite plump. The head measures 18¾ inches in circumference, and is narrow across the forehead relatively to the occipital portion, which is broad.

FIBRO-MYXOMA OF THE NASO-PHARYNX.

BY J. F. BINNIE, M.A., M.B., C.M.,
SURGEON TO THE EAST SIDE FREE DISPENSARY, KANSAS CITY, MO.

WM. M., eleven years of age, of Brunswick, Mo., was brought to me on May 14, 1890, by my friends Dr. Thompson and Dr. Edwards. Dr. Edwards had seen the patient a year previously, and found that there was a tumor in the naso-pharynx, but how long it had been there could not be made out. He removed the growth with forceps, and found it to be irregularly fimbriated in shape and about two inches long. The tumor reappeared immediately and has continued to increase in size, at first being visible from the nostril, but, as it grew, gradually moving back toward the pharynx.

When brought to me the patient was emaciated and very nervous. Respiration and phonation were both impeded. On examination I found a large tumor occupying the pharynx and pushing the soft palate forward and upward. The tumor was smooth and of a pale-red color, and somewhat hard on palpation.

Chloroform having been administered, a Bellocq's canula was introduced through the nose, and by this means a loop of wire was placed in the pharynx, the free extremities of the wire being brought out through the right nostril. The loop was then guided by the finger over the tumor till it grasped the pedicle, and the wire was then threaded on a snare écraseur (Jarvis's). By this means the pedicle was very slowly divided and the tumor removed through the mouth. During the operation respiration was so much impeded that intubation with a large gum-elastic catheter was practised and removed all difficulties.

The tumor was egg-shaped and measured 2½ x 1¾ x 1¼ inches.

The pedicle was three-quarters of an inch in thickness. The cut surface of the tumor was smooth and tough. It arose from the point where the nasal mucous membrane merges into the post-nasal.

Microscopic examination proved the growth to be a fibro-myxoma.

Since the operation I have not had an opportunity to see the patient, but Dr. Edwards writes me that his health has improved marvellously, and that he has become quite stout and lusty, and has lost his exceeding nervousness.

Twice since this large tumor was removed Dr. Edwards has tried to remove small tumors from the right inferior turbinated bone, but each time has only succeeded in removing parts of them. Now, however, on my advice, he proposes to remove the turbinated bone itself.

I have examined the portions of tumor that Dr. Edwards removed and find that they also are fibro-myxomata.

The literature on this subject is exceedingly scanty. Dr. Bosworth writes that he has only seen *four* cases, but has collected a few others. Sir M. Mackenzie has notes of only *seven* cases, although he states that he has seen two or three others.

The present case is interesting because, so far as I know, no case has been reported in such a young subject. Since writing the foregoing I have, in conjunction with Dr. Hal. Foster, seen another example of this neopathy, in an adult, arising from the upper part of the posterior edge of the nasal septum.

On June 10, 1891, the patient was again brought to me. During the past year he has constantly gained strength, and is now an uncommonly sturdy youth. Since the large tumor was removed there has been recurrence, and parts of tumors have on several occasions been removed by Dr. Edwards with the Jarvis snare.

On examination the right nostril was found to be completely obstructed, and far back in this nostril a grayish mass was seen presenting, which became more prominent during the act of deglutition. From the mouth nothing could be seen on non-instrumental examination.

An attempt to remove the tumor by means of a Jarvis snare having failed, chloroform was administered and the patient's head brought over the end of the table. The finger in the naso-pharynx showed that cavity to be almost filled with a dense, slightly movable mass of uncertain origin. By means of a Volkmann's sharp spoon, introduced through the mouth, guided by the index finger of the left hand, the mass was with considerable difficulty removed.

As the tumor was being removed the origin was found to be about the level of the lower turbinated bone, near the junction of the nose and pharynx. The nasal sep-

tum was markedly deviated posteriorly. On careful examination by the finger no more growths could be discovered. Bleeding was, of course, considerable and plugging was resorted to.

On the tumor being removed, there remained a grayish surface about the size of a nickel. This was the part seen from the nose, and evidently was the point at which Dr. Edwards had removed part of the tumor with the Jarvis snare.

As a whole, the tumor was like a bag of mucous membrane enclosing three tumors each about the size of a marble, the mouth of the bag being the point of attachment to the naso-pharnyx. The shape of the growth was very irregular, and its longest diameters measured 2¼ x 1¼ x ¾ inches.

A CASE OF PLEURISY WITH EFFUSION.

By SAMUEL BELL, M.D.,
PROFESSOR OF PHYSIOLOGY AND DISEASES OF THE CHEST IN MICHIGAN COLLEGE OF MEDICINE OF DETROIT.

Annie H., aged twelve years, came under the service of Professor Wyman, at the surgical clinic. After making a brief examination he referred her to the department for diseases of the chest. Upon inspection the following conditions were found: Deformity of the spinal column; lateral curvature, chiefly in the dorsal region; bulging of the ribs on the left side; prominence of the shoulder-blade on the corresponding side; the patient anemic and the respiration hurried. No distinct point of tenderness could be detected by pressure along the vertebral column. In answer to my interrogations the mother said that the child had taken cold some four or five months previously, followed by pain, cough, shortness of breath, and the curve in the back. Her temperature was 101°, the pulse 90, the respiration 24. As the mother stated, although the child had been under medical treatment there had been no amelioration in her symptoms or improvement in her condition. Upon a correct diagnosis depends successful treatment, and this case was not an exception to the general law. The diagnosis resolved itself into a differentiation between subacute pleurisy with effusion and lateral curvature of the spinal column. It was evident that the latter had been the diagnosis, and that the girl had been treated accordingly. Submitting the little patient to a careful physical examination the following features in the case were brought out: The normal respiratory murmur over the affected side was almost inaudible and entirely absent over the base of the lung on the left side. No friction-sounds could be heard at this stage of the disease on account of the amount of fluid-accumulation. Upon percussion the normal pulmonary resonance, even in a modified form, could not be elicited. A flat sound was heard over a greater area than is circumscribed by the heart and lungs, and this was exaggerated or modified according to the position of the patient. Vocal fremitus was absent over the affected side. In accordance with the facts, a diagnosis of subacute pleurisy with effusion was made. The marked deformity, especially posteriorly, was very similar to that found in lateral curvature. The chief symptoms were cough, shortness of breath, loss of appetite and flesh, and continual rise in temperature. The treatment consisted in strapping the chest with long adhesive strips, encircling the chest, in order to keep the side as quiet as possible. This, together with a careful general tonic treatment, brought the little sufferer back to the normal state of health.

It is the large amount of serous effusion which, containing more or less cellular elements, distinguishes subacute from the acute variety of pleurisy. In order to prevent cell-proliferation and a large amount of serous effusion, the affected side should be kept as quiet as possible, thus preventing the distended pleura from frictional irritation. In the first and second stages quiet, if properly carried out, will be found a very important adjunct to internal treatment. I have not had good success with severe antiphlogistic remedies directed toward the removal of the effusion. As in this case, and in a very large percentage of such cases, the patient will be anemic, and assimilation and absorption, which play a very important part in the removal of effusions, will not be up to par. Consequently, in order that the natural absorbents of the system shall carry away the abnormal accumulation, the whole system must be built up with tonics and reconstructive treatment. As in the case in question, a careful selection, appropriate to the peculiar condition and idiosyncrasy, will yield good results.

DISLOCATION OF RADIUS BACKWARD; REDUCTION AFTER EIGHT WEEKS.

By A. H. FRASER, M.D.,
LICENTIATE ROYAL COLLEGE OF SURGEONS, EDINBURGH, OF HARPER, KANSAS.

Cases in which a backward dislocation of the radius has been successfully treated after a period of eight weeks has elapsed since the original injury are of sufficient rarity to justify the publication of the following notes:

A. B., a tall, well-grown girl, aged twelve years, was thrown from a pony. She fell on her elbow and complained of great pain. The family physician was sent for, but failed to discover any special injury to the joint; he put on a bandage, keeping the arm extended. At the end of four weeks, there being no improvement, the arm was again examined, and pronounced to be "all right;" but, as there was no movement in the joint, and considerable deformity at the end of eight weeks, the child was brought to Dr. W. G. Muir, of Harper, who asked me to see the case in consultation with him.

On examination it was discovered that the arm was fixedly extended, with the hand in a position midway between pronation and supination, without power to complete either movement. On the inner side of the joint there was a lump of callus, the result of an oblique fracture of the ulna just below the coronoid process, and the head of the radius was dislocated backward and outward. The elbow-joint was quite immovable, the arm being moved entirely from the shoulder.

We decided to attempt reduction. The mother of the child, having consulted some local practitioners, who informed her that it would be useless, or worse, to do anything, was somewhat averse to this course, but the father, on being assured that the arm would, at all events, not be made any worse, consented to our trying.

The girl being placed fully under the influence of chloroform, forcible extension and rotation of the arm outward

was made by me, while Dr. Muir with his thumbs pressed firmly downward and inward on the head of the bone. After considerable difficulty our efforts were rewarded by the head of the bone slipping into its place. A long, straight posterior splint was applied for a week, when she returned for treatment. This consisted in passive movement in the joint, and the application of an electric current to the muscles. At the date of writing, ten days after the beginning of actual treatment, the girl can pronate and supinate her hand perfectly, and flexion has been established to an angle of 45 degrees.

Such a result ought to encourage surgeons to at least attempt reduction of luxations of the elbow, even after two months have elapsed. In this case there is every prospect of getting a most useful arm.

THE LOOFAH AS AN ASEPTIC SCRUBBING-BRUSH.

BY JOHN B. ROBERTS, M.D.,
PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PHILADELPHIA.

THE desire of surgeons to obtain a clean brush for scrubbing the skin before operations, in order to remove accumulations of epithelium and bacteria, makes a cheap article a desideratum.

I think that small pieces of the Egyptian loofah, which is found in all drug-stores for use in the bath-room, meet the indications admirably. For a number of years I have used pieces of this material for cleansing the skin before operations. A single loofah costs about ten cents and is large enough to be cut into ten or a dozen pieces. After use these pieces may be thrown away, as the cost is rather less than a cent each.

This vegetable scrubbing-brush, as it may be called, is, of course, of no value in cleansing a surgeon's nails, because it will not enter the subungual spaces as will the bristles of a brush.

I usually carry in my operating-case three or four pieces of loofah for scrubbing patients. It comes compressed like sponges, and a piece cut off before the loofah has been soaked in fluid can be carried in a small compass in an operating-case. For hospital use pieces of loofah can be kept soaking in sublimate solution until used and then thrown away, or soaked again, as the more expensive nail-brushes are treated.

MEDICAL PROGRESS.

Myxedematoid Condition of One Half of the Body.—THOMSON (*Edinburgh Medical Journal*, September, 1891) reports the case of an infant, nineteen months old, presenting a tumid condition of the right side of the body that was noticed shortly after birth. The parents were not related, nor was there a family history of goiter or of idiocy. A maternal granduncle had been insane. The mother was neurotic and presented a cardiac lesion. A younger child, four months old, was perfectly healthy and well-formed. The little patient was born naturally at term, after a tedious labor. Within a week of birth the right side of the face and the right extremities were observed to be swollen. There was little or no subsequent increase of the swelling. There were no changes in the bones; the enlargement appeared to depend upon a thickening of the subcutaneous tissues. The hair was soft and abundant. The right ear was larger than the left and presented a translucent, waxy appearance. The neck was short; the cervical fat contained several enlarged glands. The presence of the thyroid gland could not be detected. The posterior triangle of the neck on each side contained a soft, projecting mass of fat about as large as a walnut; a similar and larger mass was situated in front of the left axilla. The intelligence was enfeebled. The child died of pneumonia, but an autopsy was not permitted.

Boric Acid in the Treatment of Furunculosis.—ALISON (*La Semaine Médicale*, August 19, 1891) has recommended the administration of boric acid, internally and externally, in the treatment of furunculosis. From twelve to fifteen grains are given in two tablets daily, for from a week to two weeks. In addition, four or five times a day, gentle friction of the furuncles and the surrounding areas is made with a warm 4 per cent. solution of boric acid. In the intervals, the parts are covered with compresses saturated with the same solution. The treatment is said to abort incipient furuncles, to cause the rapid disappearance of matured furuncles, and to check the development of a new eruption. In cases of anthrax, the treatment is said to be followed by amelioration of the general and local symptoms; pain, peripheral redness, and induration diminish; the mass softens, and the pus is afforded exit; the fever declines, the agitation and the insomnia subside, and in the majority of cases recovery results without surgical interference.

The Determination of Sex.—WILSON (*Lancet*, September 26, 1891) proposes a theory that makes sex mainly dependent upon the nutritive perfection of the ovum at the time of impregnation. He holds menstruation and ovulation as practically a single process. When impregnation occurs in anticipation of menstruation, the product of conception is likely to be a male; when impregnation takes place subsequently to menstruation, the product of conception is likely to be a female—in other words, the earlier after ovulation that impregnation takes place, the greater the probability of the product of conception being a male, and, conversely, the later that impregnation follows ovulation, the greater the probability of the product of conception being a female.

The Detection of Tubercle Bacilli in Sputum.—DAHMEN (*Münchener med. Wochenschr.*, September 22, 1891) recommends heating for fifteen minutes in a flask placed in a water-bath or steam-bath sputum suspected of containing tubercle bacilli. The albumin is thus coagulated. On cooling, the solid particles and bacteria sink to the bottom of the vessel. The supernatant fluid is decanted and the cheesy sediment is triturated in an agate mortar. From this material, cover-glass preparations are made and stained in the usual way. If the quantity of sputum is inconveniently large, water may be added and sedimentation awaited. It has been found that practically only the sediment contains the bacilli when present. The supernatant fluid may after a brief interval be poured off and the lower layer heated for fifteen minutes in the manner described.

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THE NECESSITY OF MEAT-INSPECTION.

THE inspection by employés of the National Government of cattle intended for exportation is a commercial regulation adopted to facilitate this branch of the export trade. It is founded upon the restrictions imposed by foreign governments in the interests of the public health. The sanitary supervision of the home supply is left entirely in the hands of the municipality. It frequently happens, as recently shown in this city, that cattle condemned by government officials as unfit for exportation, on account of a diseased or unsound condition, are slaughtered and their flesh converted into sausages or exposed for sale upon the market. The government inspection service is necessarily restricted. It has no authority to dispose of the rejected cattle or to prevent them from being slaughtered for the home market. Unless the local authorities confer such authority, even the limited advantage that might thus be gained is lost to the public. But nothing short of a rigid local inspection of cattle and of the meat before it is exposed for sale will guarantee protection to the public against a practice quite common in all our cities.

We venture to assert that no city in the United States has a complete and faultless system of inspection of the flesh of animals intended for human consumption. In Philadelphia, such a service does not exist, even in name. The Board of Health has repeatedly made efforts to secure the means necessary to carry into effect a law upon the statute books relative to the sale of diseased or unsound meat, but without success.

The public alarm recently excited by the exposure of the practice of slaughtering for home use cattle rejected by government inspectors as unfit for exportation, has had the effect of putting in motion vigorous measures to detect and punish the offenders. But the chief interest centers in the fact, so pointedly illustrated, that without a system of sanitary inspection of the food-supplies, the public are not only defrauded, but their health and lives are placed in jeopardy. It rarely happens that the purchaser can decide from the appearance of meat whether the animal from which it was taken was healthy or diseased; hence the right to demand protection from the local government.

Fresh interest is imparted to this subject by our more precise knowledge of the transmission of tuberculosis through the milk and flesh of diseased animals. We know that tuberculosis is very common among cattle, and we know further that cattle suffering from this disease are slaughtered without hindrance. It is true that, if thorough, the process of cooking will protect against infection, but the chances of this result cannot be weighed against the certainty of protection afforded by rigid inspection.

Animals should be examined immediately before being slaughtered, and again before the meat is exposed for sale. In large commercial communities, where there are innumerable private slaughter-houses, the difficulties of inspection are very great. But in great measure they could be overcome by the concentration of the business of slaughtering in public slaughter-houses or abattoirs. It is the custom in Berlin to require all fresh meat not slaughtered in the public abattoir to be subjected to official inspection before its sale is permitted. To carry out this object, a number of inspection-stations have been provided, conveniently located, and so managed as to cause no hindrance to business. The staff of inspectors consists of one hundred and sixteen persons, and these are supplemented on two days in the week by from forty to fifty meat-inspectors and veterinary surgeons. To these stations the meat must be brought for examination, both macroscopical and microscopical, and,

after such examination, it is stamped according to its condition.

An examination of the results of one year's inspection shows that very much of the meat rejected and handed over to the police contained tubercle. Trichinæ and measles were present in pork eighteen and seventy-eight times respectively, while in more than one thousand calves the meat was too watery to be fit for food. Echinococci and thread-worms were found in some of the meat, and much that was brought to the stations was detained because it had become decomposed. We fear that an inspection as rigidly conducted in any of our cities would reveal results that the public have not been accustomed to suspect.

It is a reflection upon the wisdom of our legislators that they neglect an important duty until the popular voice clamors for relief. The recent *exposé* has furnished sufficient reason why an important means of conserving the public health should not be longer neglected. It is imperative that the Board of Health should renew its efforts to have a system of food-inspection at once inaugurated. A thorough system, conducted by an adequate force of trained officers, such as that now in operation in Berlin, is what is needed in every American city. The commission of a few inexperienced inspectors, unassisted by experts accustomed to the appearances of disease and the use of instruments of precision, would be an imposition upon the intelligence and confidence of the people. Fortunately, the University of Pennsylvania has inaugurated a course of instruction intended to prepare students for this special branch of investigation, so that the time is auspicious for satisfactorily meeting a much-needed public want.

THE ACARUS SACCHARI.

THE sugar insect is of interest to the physician, as it may possibly be that the large numbers found in raw sugar would make it injurious to the health of the consumer, and moreover there is a skin disease produced by handling unrefined sugar. *Acarus sacchari* is an insect belonging to the order Arachnida (spiders). This order is further divided into the families Pedipalpi (harvest-men or daddy-longlegs, scorpions, etc.) and Acarinæ (mites, ticks, etc.). These insects are particularly interesting to the medical man and veterinarian, as some of them are poisonous to man and the lower animals, and some are parasitic. DR. HASSEL was the first to call attention to the general occurrence of *Acarus sacchari* in raw sugar sold in London. According to PROF. CAMERON (see *Journ. of the Franklin Institute* for November, 1868), they were found in a living state in no fewer than sixty-nine out of seventy-two samples. He did not detect them in a single specimen of refined sugar. In an inferior sample of raw sugar he reports finding 500 mites in 10 grains of sugar, or 100,000 to the pound.

The *Acarus* may be avoided by using only refined sugar; but, even if they were eaten, it is questionable whether they would do any harm, and they might be nourishing, but no one would care to eat disgusting-looking insects by the thousand. The disease known as grocer's itch is undoubtedly due to the presence of this mite, which works its way under the skin, and produces symptoms identical with those produced by the common itch-mite, *Sarcoptes scabei*, and the remedies would be the same for both. It would aid the physician in diagnosis to know that grocers and handlers of sugar are liable to such a disease. Raw sugar is probably not sold in large cities at the present day, so that psora, scabies, or acariasis is a rare disease among grocers, but it is probably to be found to some extent among refiners and handlers of raw sugars. These mites multiply very rapidly, and GERLACH has computed that a single female would produce 1,500,000 progeny in three months. Thus, in treatment it is necessary to find a means of riddance of that last female. A microscopic examination of minute particles of scab shows them to be alive with the old and young *Acari*. The treatment is set forth in works on skin diseases, and various parasiticides are used, such as mercuric chloride, sulphur, etc.

Three species of *Acari* are found on sheep, and the "scab" is one of the most dreaded diseases of this domestic animal. Other species are found parasitic on the cat, dog, and swine. Horses, cattle, and birds are also infested, and quite a number of genera and species of these insects are known. The "ticks" *Ixiodidæ* are a well-known plague to the traveller in the tropics, and are not uncommon in this locality. A case is reported of a child playing among the leaves in a wood near Springville, Pa., who, on her return home, complained of pain in her arm. No attention was paid to it until the next day, when a raised tumor was noticed, a small portion protruding through the skin, apparently like a splinter of wood. The child was taken to a

physician, who, after considerable pain to the child and labor to himself, extracted a species of *Ixiodes* nearly one-fourth of an inch long, of an oval form and brown mahogany color, with a metallic spot, like silver bronze, centrally situated on the dorsal region.

UNITED STATES MEDICAL PRACTITIONERS' PROTECTIVE ALLIANCE.

The report of the proceedings of the first annual meeting of the United States Medical Practitioners' Protective Alliance, held at Baltimore, June 11, 1891, just published, contains the Constitution and By-laws, and the addresses of the Founder, Dr. J. H. DeWolf, of the President, Dr. W. H. Crim, and of Dr. W. V. Wilson. The objects of the Association, as stated by the Constitution, are "to maintain organized coöperation among the practising physicians who are legally qualified to practise in their respective States and in good standing in the profession, for the purpose of protecting medical practitioners from the abuse of dispensaries, that treat many who are well able to pay; from the unjust competition caused by short-term, quick-graduating, and inferior medical colleges; to endeavor to promote the passage of just and equitable laws regulating the practice of medicine in all the States, so that the license to practise issued by any one State shall be valid in any other State; and to devise means to enhance our financial condition (and thereby our usefulness) in every honorable way, and to derive the incalculable benefits that only can be obtained by combination and unity of action."

With these principles, and especially as further amplified and exemplified by the different addresses made, every honorable physician will have the heartiest sympathy. It seems strange that such an organization has not long been formed and in working order. Centralization and coöperation are the watchwords of the day in all fields of work. But in the medical business (for business the practice of medicine is in part, and in one clear aspect) there is no united action to correct the present abuse and forefend the coming evil. It has become such a part of the routine of public thought and personal habit to consider the physician as an almsgiver of his time and talents, that there is some shock to the mind even in the thought that his life should be in part governed by the same business customs as are altogether dominant in other walks of life. The terrible evil of hospital-abuse has grown and grown, by *laissez-faire*, by sinful sentimentalism, and by the kindness and scientific enthusiasm of the physician, to such frightful proportions that it is only by the combination of self-respecting medical men that head against it may be hoped for.

Every physician should hasten to become a member of this excellently planned organization. The Corresponding Secretary is Dr. J. F. Davison, of Glendola, N. J., who, upon application, will doubtless send copies of the *Transactions* for 1891. Dr. Wilson's address upon "The Abuse of Medical Charities" should be read by all.

POISONING BY ANTIKAMNIA.

Not long ago we spoke of the tendency to the debauching of therapeutics by manufacturers; and especially of the utterly reckless use of a certain well-advertised mixture of coal-tar products, of unknown composition, and very probably dangerous. The *New York Medical Journal* of October 17th editorially comments on a fatal case of "antikamnia" poisoning reported editorially in the *American Practitioner and News* of September 12th.

For a slight headache the victim had dosed herself with twenty-four grains of "antikamnia," supposed to represent eighteen grains of acetanilide, the rest of the baleful nostrum being supposed to be sodium bicarbonate. Acute delirium, unconsciousness, and fatal coma made up the train of events. Death occurred in about ten hours from the time of ingestion of the poison. Post-mortem examination failed to reveal other cause for the death than the action of the drug or drugs.

Our contemporaries justly remark that "antikamnia" should be listed among poisonous drugs not to be non-professionally and promiscuously prescribed, and also forcibly point out that the use of powerful agents of undeclared composition is in every instance likely to lead to unfortunate, if not always fatal results. The Philadelphia County Medical Society has a provision debarring from membership those who prescribe nostrums. "Antikamnia" certainly falls within this wise prohibition.

The seducer is always culpable. The seduced may or may not be justly liable to condemnation, according as she may or may not have age, knowledge, and experience of the world. The manufacturer who, for purposes of gain, lures members of the

medical profession to the use of his secret and worthless, if not dangerous, products must be despised by every right-thinking person. But can the physician who yields to the unholy solicitation plead either tender years or ignorant innocence in excuse of his miserable fall?

It is time to speak plainly and to act courageously, or the corruption must extend until the prostitution of our art is complete and irremediable.

SOCIETY PROCEEDINGS.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

(Continued from p. 524.)

THIRD DAY—SEPTEMBER 26TH.

DR. W. F. ROBINSON, of Albany, N. Y., read a paper on "Electricity in the Treatment of Rheumatism." Therapeutically he divided cases of rheumatism into two classes: 1. Those in which only one or two joints are affected, which he always treats by means of galvanism. 2. Those in which the rheumatic poison is more extended in its action, involving joints, muscles, fascia, etc., for which he employs static electricity. The electrodes used should be large—the larger the better—and carefully made. If covered with sponge, this should be soft and free from gritty particles. In order to increase the conductivity of the skin, the sponges should be saturated with a hot solution of bicarbonate of soda. The caustic action and the electrolytic action of the electrical current are to be avoided in the treatment of rheumatism. The action of vital stimulation is to be sought; to obtain it the procedures of interruption and voltaic alternation must be adopted. Voltaic alternation is a still stronger stimulation than interruption, but it must be used with caution, for with strong currents the pain and irritation are very great. Joint-rheumatism, pure and simple, is almost powerless to withstand the direct application of the galvanic current. When the disease is more diffused and involves various tissues and organs in different parts of the body, static electricity is indicated. The general charge is rarely used alone, and static electricity is usually given by means of special electrodes in the form of sparks. The applications may be made on alternate days. The usual length of the treatment is ten minutes, for about five of which sparks are drawn, the patient during the remaining five minutes simply sitting quietly upon the platform and taking the general charge.

Dr. Robinson expressed the belief that electricity has a twofold action that meets all the indications of rheumatism: a specific action against the morbid process and a general tonic action that tends to build up the system depressed as a result of the disease.

DR. GOELET stated that the sedative effect of galvanism could best be had by currents of short duration. To make a clay electrode that can be applied agreeably to the patient, Dr. Goelet makes the clay of the consistency of putty, and so maintains it by keeping it moist. A flat pad is made by rolling it on a board as if it were dough; it is gotten into shape, and, after having a metallic plate placed on the back, is covered with a layer of absorbent cotton; then sewed up in a gauze cover. On the back is placed rubber cloth, just as in sponge-covered hand electrodes. To avoid the discomfort of a cold application the electrode may be kept on a warming-pan which consists of a flat zinc jug filled with hot water.

DR. WALLING stated that he had observed pain in the cardiac region from positive insulation, while negative insulation occasioned no discomfort. The positive causes constriction of the capillaries, thus acting on the circulation, while negative insulation does not.

PROF. EDWIN J. HOUSTON, on invitation, said that heretofore advances in the line of electro-therapeutics have been somewhat hampered by the natural tendency to regard the body as a receptive device rather than as an electric source, as it must be regarded. Chemical processes are constantly going on in it that must result in a difference of potential between the different organs. If this is true, then there must necessarily exist variations in regard to the differences in potential in the organism. Secondly, the human body necessarily displays differences of temperature; although the temperature of the body is about 100° F.. yet there are differences in the internal organs and in the generation of true thermo-electricity. These differences of temperature must also result in differences of potential, which the body normally possesses, and necessarily in febrile disturbances there would be abnormal electrical conditions to which in the future the electro-therapeutist might do well to direct his observation. Thirdly, the body presents abnormal and normal currents. There are demarcation currents, currents produced by injuries to nerves and chemical decomposition, a result of the tendency to a restoration of the normal condition. If the human body is to be regarded as an electrical source, the electrical diagnostician, as well as the electro-therapeutist, has to ascertain the following conditions of the body:

First. The condition of the human body as regards differences of potentialism.

Second. The changes of muscles following the conditions of rest and activity.

Third. The resistances of the different parts of the body.

In all these directions the most promising line of research must be in modifying and ascertaining the true resistance of the different parts of the body; if possible, to eliminate that very variable element, the resistance of the skin. When the resistance of any organ or part of an organ, or the whole body or a part of the body, and differences of potential in volts are known, proper calculations can be made.

Under what conditions may the resistance of the body be expected to vary? First, the condition of the skin as to dryness or moisture, and then the diseases of the skin; second, the temperature; and, third, whether the resistance of the body would be the same from the head to the feet as from the feet to the head; if the human body is a source and not a receptive of electricity, the body must have a resistance; and fourth and most important, the normal and abnormal condition of the body as

altering its resistance. It is well known that diseases (at least some of them) change the resistance of the body very materially.

Dr. M. A. Cleaves, of New York, read a paper on "The Use of the Galvanic Current in Articular Inflammatory Exudations," in which she reported a case of subacute articular rheumatism of the right wrist and hand in a woman who had already suffered several attacks of inflammatory rheumatism. The hand was swollen, infiltrated, and edematous. There was a decided increase of local temperature, much pain, and extensive capillary congestion. The carpal and metacarpo-phalangeal articulations were in a state of extension; muscular power and sensation were almost lost.

Stabile applications of galvanism, 10 milliampères for fifteen minutes, with the anode at the sternum and the kathode successively to the dorsal aspect of the wrist and metacarpo-phalangeal articulations, were soon followed by relief from pain, diminution of heat, and increased mobility. The treatment was given daily for one week, then at intervals of two or three days. In all there were thirteen séances.

Subsequently five applications of the faradic current were made, the secondary kathode at the sternum, the anode to the motor points and labile to arm and hand, 35 cyl., for from five to ten minutes, with the result of increasing muscular power. The ultimate improvement was decided and satisfactory.

In another case there were partial extension, pain, and loss of mobility of the right wrist and hand, as a sequel of cellulitis and blood-infection following the bite of a mosquito. The interrupted galvanic current was applied by means of a gauze-wire electrode, 3 by 4 inches, covered with absorbent cotton, placed over the spinal region of the brachial plexus and attached to the anode, the kathode being connected with a cotton-covered gauze wire, 1½ by 8 inches, placed successively over the carpal, metacarpo-phalangeal, and phalangeal articulations. The current-strength was as great as could be borne. The length of the séance was from fifteen to twenty-five minutes. There was soon increase in mobility of the affected joints, partial restoration of function, and relief from pain.

There were eleven sittings. The final result was not all that could have been desired, but was a decided improvement upon the preëxisting condition. The question naturally arises, Why should we wait until the advanced stages, attended as they are with marked thickening of the articular and peri-articular tissues, contractions of muscles, exudative matter about sheaths of tendons, greater or less impairment of movement, and deformity, in which electricity must be our chief resource, when better results can be obtained in a subacute condition, before exudative matter has become so fully organized.

There is no danger of developing more acute inflammation. On the other hand, it is necessary to excite a more active circulation in the part, with a view of removing the congested state of the capillaries and venules, so favorable to the development of fibroid growths.

Massage is a means toward the same end, but while it quickens and equalizes the circulation, it does not possess the powers of galvanism to produce chemical changes.

In adopting a definite plan of treatment, Dr. Cleaves was governed by the hypothesis that "living means nutrition, nutrition chemical action, and chemical action under proper conditions means electric current." These conditions are (*a*) a closed circuit combined with (*b*) any two different tissues, and (*c*) one acted upon, the other not.

Animal currents are proved to exist. The acted-upon tissue is an "electro-motive source." It corresponds to the zinc of a primary battery. The electrolyte is the fluid conveying the food to the cells of the acted-upon tissues.

The acted-upon tissue is always *electro-positive* to some other tissue acted upon. This hypothesis holds true of both normal and morbid nutritional processes. As regards such processes, it compels us to base our treatment upon the broad generalization that *every such process is an "electro-positive focus."*

Proliferation is an excessive chemico-nutrition, which the positive pole makes more excessive, the negative pole less excessive—that is, counteracts.

In atrophy there is a deficient chemico-nutrition, which the positive pole stimulates and restores. The negative pole, on the other hand, makes more deficient or destroys. The results, united with much that has been done heretofore, are confirmatory of the hypothesis upon which treatment was based.

In the treatment of disease, results are, after all, the main thing, even if the relation between cause and effect in the use of remedies cannot always be explained; once a scientific basis for polar action is established, much confusion will be done away with, and a decided step will have been taken toward the establishment of a rational electro-therapy.

Dr. von Raitz, of New York, read a paper on "Electricity in Ankylosis," in which he said that false ankylosis, even with some osseous union, yields to the constant current, with the assistance of massage and passive motion, provided the treatment is carried on earnestly and intelligently.

As the synovial membrane secretes an alkaline lubricating fluid, the functions of nature are to be stimulated by the application of the negative pole. Consequently the affected joint must be snugly enclosed in an electrode connected with the negative pole. Another large electrode may be placed over any indifferent part, and connected with the positive pole. With large electrodes, powerful currents can be used without causing pain or inflammation. For the larger joints, 100, even 120 milliampères, in half-hour sittings, three times per week, are generally sufficient. Much will depend upon massage, to be applied before the current, upon passive motion, upon constitutional treatment, and upon general hygienic conditions.

Dr. Charles G. Stockton, of Buffalo, read a paper on "The Use of the Gastric Electrode in Diminished Peristalsis."

The instrument employed consists of an ordinary stomach-tube, twenty-eight inches long, with two openings near the distal extremity. At the proximal extremity it is fitted with a hollow steel coupling, which, attached to three feet of the rubber tubing, makes a continuous siphon about five feet in length. With this, the stomach is emptied, and without removing the instrument from the stomach, the tube is disconnected

at the coupling, and a spiral wire, also twenty-eight inches long, is introduced into the tube and the coupling closed by a polished steel plug at the proximal extremity, a sponge electrode being applied to the back or abdomen. In this way the current is conveyed to the stomach admirably, and the electrode does not come in contact with the gastric mucous membrane, save at the fenestra on either side of the tube.

In the treatment of cases of gastric derangement it is best to restrict the diet to those substances that, upon examination of the stomach-contents, are found to be most readily digested. The current should be applied after lavage has been practised, and the faradic current is that which is usually most satisfactory, and which must be applied in sufficient strength to produce, not merely contraction of the abdominal muscles, but movements of the stomach itself.

The sittings should continue for from five to fifteen minutes, usually beginning with five-minute séances and increasing the duration until the limit of endurance is reached, as shown by an excessive secretion of mucus, a disturbance of digestion, or a feeling of lassitude or pain on the part of the patient.

Having reached this, the proper dosage can readily be estimated. The treatment must, in some instances, be continued for a prolonged time; in other cases, relief follows a few applications.

Dr. Stockton related that he had obtained greater benefit from the application of the continuous current, with occasional interruptions, than from the application of the faradic current.

Twenty-one of forty cases treated in the manner outlined showed greater or less dilatation, as demonstrated by accurate measurement. Of this number, twelve presented dilatation of an extreme degree. Some are still under treatment, but five have been discharged as cured; all have been greatly benefited and a number have improved to such a degree that absorption takes place properly and the stomach is emptied quite uniformly five or six hours after an ordinary meal.

Cases of marked gastric catarrh do best with the continuous current, the anode applied within, the kathode on the back, from eight to fifteen milliampères being generally employed.

With the current occasionally interrupted dilatation may be relieved, and, not infrequently, the catarrh also improved. In instances of atrophy of the mucous membrane, either current may be employed. The continuous current is useful here because it is more potent in stimulating the secretion of hydrochloric acid than the faradic. Occasionally an excess of hydrochloric acid interferes with the electrical treatment. This, however, is unusual and generally but temporary. As a rule, in ordinary instances the applications should be made at bedtime and the stomach left empty and at rest during the night. This plan, however, will prove impracticable when there is great excess of hydrochloric acid, for this so disturbs the empty stomach that the patient not infrequently loses sleep or wakens in the morning feeling miserably.

In nearly every case of weakened motility, electricity by direct application is of the utmost importance. The exceptional cases are those associated with malignant disease, a few rare cases associated with gastric ulcer, and some instances of general neurasthenia, in which electricity, no matter how or where applied, is resented by the patient.

DR. LAWRENCE WOLFF, of Philadelphia, read a paper on "Electricity in Diseases of the Stomach." He maintained that the application of galvanism with a view of exciting increased glandular secretion has been decidedly overrated. At no time had he been able, by chemical means, to detect an increase of hydrochloric acid in the gastric juice after the external application of the galvanic current. As internal galvanization, with a view of improving the digestive powers, could only be practised when the stomach was partially filled with water, its value, if it possessed any, would not be available. Yet Dr. Wolff had found the galvanic current useful and of the greatest value in dilating traumatic strictures of the esophagus. He reported an illustrative case in which by the daily employment of metallic bougies in conjunction with galvanic currents of from five to ten milliampères a cicatricial stricture of small caliber was satisfactorily dilated.

The electrode employed consisted of a soft copper wire, at the lower end of which was a thread for screwing on the olive-shaped bulbs, while at the other end was a clamp for the reception of the wire, which was insulated by being covered with soft rubber-tubing. A large flat electrode was applied to the epigastrium and the sound introduced into the esophagus as far as the stricture, before the connection was made; the current was then gradually permitted to pass and increased until a perceptible sensation at the situation of the external electrode was experienced by the patient. The current was again withdrawn before the removal of the sound.

Dr. Wolff stated that he had also found faradic stimulation of the muscular fibers of the stomach serviceable in atonic ectasis. Before the principal meal of the day the stomach is washed out and the patient is requested to drink about two glasses of water; the tube containing the electrode is then swallowed; the current is then turned on, first gradually, and until peristaltic contraction is apparent to the hands applied to the parietes or to the eyes. The external electrode is usually a large and broad sponge, and is generally applied to the epigastric region; the internal electrode must be immersed in the water contained in the stomach.

Dr. Wolff employs an electrode constituted of a small stomach-tube with two fenestra; through the tube passes a small insulated copper wire, which projects from one of the fenestra; this extremity is denuded of its insulation for about two or three inches, and is twisted into a small spiral, which is slipped through the fenestrum back into the tube so that it cannot come in contact with the stomach.

DR. HORATIO R. BIGELOW, of Philadelphia, read a paper on "Alternative Currents," which he stated was a review of two ingenious and scholarly papers by Mons. D'Arsonval.

DR. J. H. KELLOGG, of Battle Creek, Mich., presented two new electrodes, one of which is flexible, slightly adhesive, and to be used dry. It is made by dissolving twenty ounces of the best gelatin in ten ounces of boiling water and adding ten ounces of glycerin and two drams of sodium chloride. The liquid is heated and

ten ounces of finely pulverized gas-carbon (graphite) added and thoroughly mixed.

To make an electrode a thin layer of the mixture is poured into a shallow tin pan of the size desired for the electrode, the inner surface of which is besmeared with vaselin. Upon this layer is placed a piece of sheet lint of sufficient size to allow the edges to be turned up about one-half inch around the sides of the pan. Upon this is poured more of the mixture, sufficient to saturate and cover the lint; another piece of lint is applied, and the process is repeated until a suitable electrode is cast. Two layers are usually sufficient. A piece of brass-wire cloth, to one corner of which a binding-post has been attached, is next applied, and over this more of the mixture, and then another piece of lint. The wire cloth and the last layer of lint may be a trifle smaller than the electrode is desired to be. Lastly, the upturned edges of the first layer of lint are folded over the back of the electrode, and a sufficient quantity of the mixture applied to hold them in place. When the electrode is cold and sufficiently hardened it is carefully removed from the mould. If the surface of the electrode is not perfectly smooth, or becomes roughened by use, it may be polished with a hot spatula; if the electrode becomes cracked, or its surface very irregular, it may easily be repaired by applying a little of the hot gelatin-mixture and smoothing with a spatula. This electrode is light, clean, adhesive, a good conductor of electricity, and durable.

The second electrode consists of a metallic vacuum-cup, to which a binding-post is attached, a moist sponge being placed in the cup. In practice the air is exhausted from the cup, causing it to adhere firmly in position, at the same time bringing the tissues in close contact with the sponge.

DR. THOMAS W. POOLE read a paper entitled "Some Suggestions as to the Mode of Action of the Galvanic Current in Gynecological Practice," in which he ascribed to electricity, in gynecological practice, a paralyzant action upon the motor nerves of involuntary muscles, as a result of which contraction of the arteries takes place. A moderate effect, quickening the blood-stream, accounts for the beneficial effects occasioned, while an excessive outflow of blood into the veins causes increased pain, tumefaction, and an aggravation of all the symptoms.

He held that the effects produced by the electric current upon protoplasm, upon the blood-corpuscles, upon the heart of frogs in arresting its pulsations, upon the muscles in inducing the earlier onset of rigor mortis, are all what might be expected from an agent inimical to nervous activity.

DR. HENRY MCCLURE, of Norfolk, England, presented a paper entitled "Electrical Contact-force," in which he considered the changes taking place and the forces generated at the junction of dissimilar metals or other substances.

He also elaborated Rust's theory of thermo-electricity, which holds that the electro-motive force is proportional to the rate of speed at which heat passes the two *junctions*.

Dr. McClure considers true contact-force at the junction of two dissimilar metals or substances to be of the nature of a static strain, heat in the thermo-couple being the means of breaking down such a strain and converting static into kinetic electricity. Whenever a static strain is broken down a current is produced. True contact-force may be seen in insulators as well as in conductors. The striking effects of frictional electricity are due to the same cause—contact of dissimilar substances—and by their contact electricity becomes transferred from one to the other, the violence of friction being mostly necessary to aid the transfer, so that one becomes positive and the other negative. When such a strain is broken down, as in disruptive discharge, a current is produced having electrolytic effects. In good conductors such contact-forces are feeble; electricity seems to slip through the fingers of a metal, as it were, and the driving force that it can exert is weak, while an insulator gets a good grip and thrusts it along with violence. The metals do not all grip electricity alike. Iron is a metal the atoms of which grip positive electricity better than negative electricity; a positive current gets propelled in iron from hot to cold; copper, on the other hand, acts similarly on negative electricity.

DR. FOVEAU DE COURMELLES, of Paris, presented a memorial upon "Medicamental Electrolysis," in which he described the method and the conditions in which he made electrical applications by means of decomposable medicaments. For tumors, synovial cysts, glands, wens, stone, in fact in all abnormal conditions of local hypertrophy, the continuous current was employed in conjunction with medicinal agents, such as the iodides, the salts of lithium, the bicarbonate of sodium. The action is facilitated by the application to the skin of a kind of cupping-glass.

The pain of neuralgia, rheumatism, hepatic and renal colic, can be made to disappear by the employment of the continuous descending current in conjunction with such medicaments as opium, aconitine, and quinine.

Anesthesia and muscular atrophy may be improved by continuous ascending currents with such adjuvants as strychnine and phosphate of lime.

Paralysis, disorders of the nervous system, abnormal functions of various kinds are remedied by interrupted currents, with the introduction into the organism of tonics or excitants, according to the necessities of the case. Baths of static electricity, with medicamental absorption, and descending electrical shower-baths are useful adjuvants. Good may be expected to follow the application of the same principle in the treatment of vesical calculus.

Dr. de Courmelles reported a case of articular rheumatism, one of fibroma of the uterus, one of enlarged prostate, two of gonorrhea, and one of hemiplegia in which satisfactory results were obtained by the employment of the method indicated.

DR. EPHRAIM CUTTER, of New York, presented a communication on "The Galvano-cautery: Its Use in Removal of Piles and Growths," in which he insisted upon the employment of a good battery, which, if a storage-battery, should be well tested as to its connections.

He recommended heavy conductors of pure silver as less bulky and more flexible than copper; carbon and zinc plates, variously connected, so as to be portable, and not break; and broad connections, with as few breaks as possible.

The best battery-fluid is constituted of one ounce of sulphuric acid and eleven ounces of a saturated solution of sodium bichromate, which should be cold.

Dr. Cutter reported seven cases of various new formations in which employment of the method indicated yielded satisfactory results.

DR. A. H. BUCKMASTER, of Brooklyn, presented a report of "A Case of Retroflexion and Cystic Degeneration of the Ovaries Treated by Hysterorrhaphy Unsuccessfully and Cured by Electricity," occurring in a young, unmarried woman, in which three applications a week were made, with the clay electrode on the abdomen and a platinum tip covered with a large mass of moistened cotton in the vagina.

DR. G. H. WHITCOMB, of Greenwich, N. Y., presented a report of "A Rare Case of Twin Intra-uterine and Extra-uterine Pregnancy Treated by Electricity," occurring in a large, robust woman, thirty-six years old, who in the twelfth week of her second pregnancy, complained of sudden severe pain in the region of the left cornu of the uterus, with evidences of local peritonitis.

Under appropriate treatment the acute manifestations subsided. The uterus was anteverted and prolapsed, the cervix resting upon the perineum just above the sphincter ani and the fundus lying forward against the bladder, causing vesical tenesmus. The organ was unusually large for the corresponding period of gestation, owing to the previous hyperplasia and to the encroachment of a large mass on the left, which seemed to be continuous with, and a part of, the uterus. This body was as large as an orange and supplied with numerous pulsating vessels; not clear in outline, but firm and elastic in consistency. The uterus, from its size, shape, and consistency, unquestionably contained a fetus. The history, together with the conditions found, indicated as clearly as possible that there was also either a tubo-uterine or an interstitial pregnancy, or one in a rudimentary cornu.

With a ball electrode in the vagina below the mass, and a small flat electrode upon the abdomen directly over the mass, a mild and increasing faradic current was passed for fifteen minutes daily during two weeks. The symptoms improved continuously in all respects, though some pain persisted. The enlargement diminished noticeably. The impression gained by constant watching was that it had gradually receded into the uterus. At the end of several days a slight, dark-brown discharge, lasting for an hour, occurred, which returned on the following day, when it was attended by a periodical pain. Abortion promptly following, the patient expelled the fruits of a twin-conception. The cord of the fetus first delivered was broken; that of the second was attached to a placenta on the right side of the anterior wall of the uterus near the fundus.

In little more than a year the woman gave birth to a healthy child at term; and, so far as known, after an uneventful gestation and labor.

DR. A. G. HENRY presented "A Report of Three Cases of Uterine Tumors Treated with Galvanism," in which a thirty-two cell battery was used. As in neither of the cases a sound could be introduced into the uterus more than one and a half inches, a small olive-shaped tip for the intra-uterine electrode was employed.

In each case negative cauterizations were invariably made. The strength of the current ranged from twenty to seventy-five milliampères—usually after the first few applications from thirty-five to fifty-five. The duration of the sittings was from five to ten minutes. In all three cases the treatment was successful.

NEW YORK STATE MEDICAL ASSOCIATION.

Eighth Annual Meeting, held in New York City, October 28, 29, and 30, 1891.

FIRST DAY—OCTOBER 28TH.

THE President, DR. STEPHEN SMITH, of New York County, delivered an address on "The Art of Teaching Medicine," in the course of which he said that every teacher should bear in mind Bacon's quaint saying: "He that questioneth much, shall learn much," and should not allow the student to be simply receptive. It would hardly be necessary to enunciate such well-known principles, but that the current methods of teaching medicine are unique. The medical student *reads* medicine; his individuality is lost in the class. The whole policy of most medical schools seems to be to make the professors and not the students the prominent feature.

The ideal method of teaching medicine would divide the classes into small sections, grading the students according to their individual capacity and proficiency. Recitations would be held at proper intervals, and practical demonstrations given whenever practicable. The knowledge of each student would be tested by examinations, before he would be permitted to pass to the next grade. That the ancient art of teaching medicine can be revived has already been practically demonstrated with gratifying success by one of the large metropolitan schools of medicine.

DR. ELBERT T. RULISON, of Montgomery County, read a paper on "The Use of Chloroform in Labor," in which he urged the more general employment of chloroform during labor, cautiously administered, avoiding complete anesthesia, in order to relieve pain, diminish shock, and avoid frequent ruptures of the perineum.

DR. OGDEN C. LUDLOW, of New York County, heartily indorsed the employment of chloroform in labor, which he preferred to ether in all cases except in those requiring severe and protracted operation, as he considered the greater control over delivery given by chloroform to more than counterbalance any dangers inherent in the anesthetic itself. The best inhaler, which is always accessible, is a tumbler, into which is pressed a handkerchief, or some absorbent cotton.

DR. M. W. TOWNSEND, of Genesee County, considered the routine use of any anesthetic during labor to be meddlesome midwifery. He deprecated the too common practice of administering anesthetics rapidly and in such a way as to produce partial asphyxia. In cases of labor in which he deems it necessary to employ chloroform, he has the patient to count aloud slowly, and when she ceases counting, the anesthetic is immediately withdrawn.

DR. GEORGE E. FELL, of Erie County, read a paper, entitled "Forced Respiration—Continued Observations," in which, in addition to the saving of five lives by himself and of one by a foreign physician, by means of this method of forced respiration, already reported, he stated that he had saved three more, and a number of other physicians had met with like success. While the method had chiefly been used in cases of

opium-poisoning, it would probably prove equally useful in cases of drowning and of traumatic shock.

Dr. Fell insisted upon his claims to priority, and exhibited the apparatus employed to carry out the procedure. He stated that forced respiration had been employed for many hours at a time without damage to the patient's lungs, and that on various occasions, when Sylvester's method of artificial respiration had proved utterly futile, this method had brought prompt relief, and in many instances, a cure.

Dr. Henry C. Van Zandt, of Schenectady County, read a paper on "Preventive Medicine," in which he deprecated the traditional reluctance of physicians to educate the masses on medical subjects, thus actually favoring the development of quackery. The advanced state of sanitary science among the Jews up to the time of their scattering abroad among other nations probably had much to do with their longevity. Modern sanitary science is responsible for a remarkable lowering of the death-rate in many of the principal cities, and an increase in the average duration of human life.

Dr. John Shrady, of New York County, read a paper on "The Theories of Rheumatism," in which he admitted that a study of the much-vexed question of diet in its relations to rheumatism does not yet admit of definite conclusions; in this connection, however, the observations of Dr. Alexander Hadden on animals are interesting. He maintains that graminivorous animals are most commonly affected by rheumatism, and points to the frequency with which calcareous deposits take place in birds. Dr. Shrady was not willing to admit the truth of the microbic theory of rheumatism; he thought that the drift of modern opinion concerning the etiology of rheumatism was in the direction of an irritant seeking the most convenient way of escape from uncongenial surroundings.

Dr. Alfred L. Carroll, of New York County, opened the discussion on "Acute Diffuse Peritonitis." He considered the histology of the peritoneum, a large part of which is devoted to suspensory purposes, or forms extravagant pouches, which give an enormous extent of endothelium, the stomata of which are connected with an elaborate system of lymphatics. In short, its function of lubrication is subordinate to that of absorption.

When exudation into the peritoneum takes place, it depends chiefly upon the etiology of the condition. The exudation is commonly plastic when the peritonitis arises by extension from adjacent inflammation, or as a result of contusion and manipulation. Dr. Carroll did not think it proper to ascribe the origin of the pus, and other cell-elements in peritoneal exudates, exclusively to the migration of leucocytes.

The part played by microörganisms, or by the products of fermentation caused by them, has not yet been determined; that is a problem for future bio-chemistry to solve.

The differential diagnosis is not infrequently a matter of some difficulty, because some cases pursue an afebrile course, or are even accompanied by a subnormal temperature, and because even the classical symptom, pain, may be absent. At first there are often only the physiognomy and the decubitus to guide the diagnostician. The diagnosis is still more difficult when diffuse peritonitis supervenes upon preëxisting maladies, or upon traumatism.

Dr. Carroll emphasized the general proposition that the therapeutic indications are not only modified by, but are altogether dependent upon the causative factors. When intense pain menaces the heart, morphine is temporarily useful, but when surgical methods are as imperatively demanded as they are in cases in which the inflammation is caused by penetrating or strangulating lesions, no further reliance should be placed on this drug. In other than surgical cases peristalsis is a "bugbear," and is inconsistently dreaded, for, when tympanites occurs, peristalsis ceases. Small "persuasive" doses of calomel given at an early stage will often happily prepare the way for slowly administered enemata. Belladonna deserves more attention than it has hitherto received, as it deadens the sensibility of the nerve-centers and allays pain; it diminishes reflex irritability and tends to relieve constipation and to support the heart embarrassed by pulmonary compression as well as by its own enfeeblement. Some of the cases in which Mr. Tait achieved success by the early administration of Seidlitz powders may really have been instances, not of peritonitis, but of the "fever of non-elimination." When a purulent exudation is present, or is likely to occur, quinine, which retards the migration of leucocytes, is indicated. Stupes and light warm fomentations are more philosophical than the depressing refrigeration of ice-coils. In severe cases a tendency to a lowering of the temperature is often of evil omen, and when this exists it should exclude the use of all depressants.

Dr. Heneage Gibbes, of Ann Arbor, presented a communication, in which he discussed the comparative anatomy of the peritoneum and the relations that the bloodvessels and lymphatics bear to this important membrane. He detailed experiments that he had made on animals: Fluids containing pure cultures of various microörganisms were injected into the peritoneal cavity, with negative results; but when such injections were made into the systemic circulation, plugging up of the vessels and other marked effects were observed. The lymph that exudes into the peritoneal cavity is apparently capable of rendering a certain quantity of noxious material innocuous. Tuberculous material had even been injected into the peritoneal cavity without the development of the slightest tuberculous inflammation of the peritoneum.

Dr. Victor C. Vaughan, of Ann Arbor, in a communication, particularly considered the relation of microorganisms to peritonitis. No one species of organisms has been found to be invariably present. If the peritoneum be entirely free from irritation, the injection of germs suspended in distilled water has no effect, but if the suspension contain, for instance, bits of agar-agar, peritonitis follows the injections. Peritonitis can be induced by the injection of sterilized emulsions containing one drop of croton oil, the absence of microörganisms being proved by culture-experiments. Sterilized preparations of trypsin, injected into the peritoneal cavity, produce peritonitis; so that, aside from contained germs, the contents of the intestines introduced into the peritoneal cavity are sufficient to cause peritonitis.

Dr. E. D. Ferguson, of Rensselaer County, said that clinically there are cases that do not correspond with

the usual ideas of infective peritonitis—for example, cases with clear effusion, which recover completely, with or without paracentesis. Cases of toxemia sometimes closely simulate diffuse peritonitis. The object of treatment should be "to remove irritation;" but, of course, it is often difficult to determine the cause of irritation. Saline laxatives are often useful, when such remedies are not absolutely contra-indicated, and at the head of the list is to be placed magnesium sulphate.

DR. HAROLD C. ERNST, of Boston, accepted it as proved that most acute inflammatory and suppurative processes in the human body depend upon the activity of one or more forms of bacteria. As a result of some experiments that he had made, he concluded that acute peritonitis could not be produced in the lower animals except by the action of bacteria or their products.

DR. JOHN CRONYN, of Erie County, cited a case in which the diagnosis of metastatic tuberculous peritonitis in a patient having pulmonary tuberculosis had been fully confirmed by the post-mortem examination. A point of practical importance in the treatment of peritonitis is the administration of a combination of opium with quinine. By associating these drugs larger doses can be given without producing either narcotism or cinchonism.

DR. GEORGE T. HARRISON, of New York County, considered the subject from a gynecological standpoint. When peritonitis is well established, purgatives can only be harmful. He had never seen the symptoms ameliorated by warm applications, while the employment of ice-bags or coils moderates pain and peristalsis, often localizes the inflammation, and makes the patient comfortable without resort to large doses of opiates.

DR. WILLIAM MCCOLLOM, of Kings County, made a strong plea for the recognition of an idiopathic form of peritonitis, basing his position on the known liability of certain individuals to disease of the serous membranes, as well as upon his personal experience. At one time, while practising medicine in Vermont, where the winters are severe and the temperature very variable, he frequently treated cases of peritonitis occurring almost exclusively in males whose occupations exposed them to the inclemency of the weather. At the time referred to, Dr. Alonzo Clark was urging the adoption of the "opium treatment." Dr. McCollom had ever since employed this plan of treatment; he was loath to relinquish a method that had stood the test of about forty years of practice to take up the use of laxatives, a method of treatment that had proved most unsatisfactory.

DR. NICHOLAS SENN, of Chicago, considered the different varieties of peritonitis. He described the plastic form as a process that remains circumscribed, in this respect being widely different from septic peritonitis, in which the primary cause continues to multiply. Owing to the absence of pain and fever, and frequently to the existence of even a general feeling of well-being, many cases of virulent puerperal peritonitis are often not recognized during life. The pulse that rapidly rises to 150 or 200 per minute is, however, significant. Dr. Senn related the history of a case that he had recently seen, in which the diagnosis seemed to lie between ascites and a large ovarian cyst. He had himself looked upon the case as one of tuberculous peritonitis, with localized ascites. On performing laparotomy, nothing but a true ascites could be found, and recovery followed the employment of drainage for several weeks. In fact, the case was one of hydrocele on a large scale—a passive form of peritoneal inflammation not due to infection from without, but to a loss of equilibrium between secretion and absorption. Dr. Senn expressed the belief that these cases are more common than is usually supposed. Reasoning from what is known of idiopathic inflammations of the meninges and pleura, he most emphatically expressed his belief in the existence of an idiopathic form of peritonitis.

DR. MARCY, of Boston, expressed the opinion that in cases of tuberculous peritonitis laparotomy often results in great benefit to the patients, although the reason for this may not yet be well understood. He cited an interesting case in which frequent and large tappings of the abdomen failed to prevent rapid reaccumulation, but in which a cure was promptly effected by establishing permanent drainage. The explanation is probably to be found in the consequent relief of the mesentery from undue pressure. Dr. Marcy cited statistics showing the safety of exploratory laparotomy, and advised a more frequent resort to this valuable measure.

DR. T. D. STRONG, of Chautauqua County, reviewed the "Opium Treatment." The degree of tolerance to opium is to a certain extent a measure of the severity of the attack. In a very desperate case, in a boy ten years old, eighteen grains of morphine were administered in thirty-six hours, and the lad appeared in no way drowsy, but constantly complained of pain. When this point was reached, a change for the better appeared, and the boy made a slow but complete recovery.

DR. J. LEWIS SMITH, of New York, considered the subject of "Peritonitis in Early Life." No age, he stated, is exempt from peritonitis. It has long since been shown that the fetus sometimes becomes nonviable and perishes in consequence of peritonitis, and that the most common cause of this is inherited syphilis. Peritonitis may prove fatal before birth, or, if the child is born alive, death usually soon results. Peritonitis of the newly born is by no means uncommon: the inflammation is commonly caused by the entrance of septic matter into the system at the umbilicus, from foul umbilical dressings or from foul water employed in washing. The pathogenic factor resides in microbes.

Primary or idiopathic peritonitis is that form that occurs when there has been no antecedent disease that might give rise to it. Its occurrence is denied by some writers, but that it does occur, and not infrequently, is proved by a large number of cases reported by different observers.

During infancy and childhood peritonitis may occur from a considerable number of causes, as from septic infection or blood-poisoning; in connection with erysipelas; from disease of the abdominal viscera—more frequently of the hollow organs than of the solid viscera; as a result of appendicitis or typhlitis. Children less frequently than adults have ulceration of Peyer's patches in typhoid fever, but it sometimes does occur, with subsequent perforation and fatal peritonitis. Another cause of peritonitis is traumatism. A case of fatal peritonitis is on record following tapping for a congenital hydrocele. In females, peritonitis may result from gonorrhea, the inflammation passing from the

vagina to the uterus, and thence through the Fallopian tubes to the peritoneum. Tuberculous peritonitis occurs much more frequently in infancy and childhood than in adult life.

The symptoms of peritonitis in children are usually quite distinct, although in some cases they are so obscure that it is very difficult to make a diagnosis. The treatment must be instituted early and must be judicious. The indication is to subdue the inflammation as soon as possible and at the same time to employ such dietetic and medicinal remedies as will sustain the strength and prevent heart-failure, which is the ordinary cause of death. It is important that the patient should remain quietly in bed, with the least possible movement of the body and lower extremities. In the ordinary forms of peritonitis, purgatives act injuriously in children, as in adults. During the active period of the disease it is better not to employ any treatment whatsoever for the purpose of opening the bowels, even if one or two weeks elapse without a stool. As for drugs, opiates are the chief reliance. They relieve not only the tenderness and pain, but also the vomiting, and produce a quiet state of the intestines. The remedy should be given in doses sufficiently large to produce this effect. A child of twelve years can take half a grain of opium every two or three hours, or sufficient to secure sleep. The removal of the cause of the disease, if it can be effected by means of a surgical operation, should be carefully considered.

DR. E. G. JANEWAY, of New York, stated that the diagnosis of acute peritonitis is at times extremely difficult. Tympanitic distention of the bowels may be present, as well as pain and fever, without any peritonitis; it is only by closely watching such cases that a correct conclusion can be arrived at. Dr. Janeway reported the case of a boy, four years old, who presented high fever, constipation, and pain in the right iliac fossa, with tenderness so considerable that he had to be examined under chloroform. This condition continued for four days, all of the symptoms indicating peritonitis. On the fourth night the boy slept well, on the following morning his temperature was 99°, and two days afterward he was well enough to go out. A pneumonia or a pleurisy may cause reflex pains in the abdomen, with marked distention. The symptoms of peritonitis may also be simulated by hepatic colic—more rarely by renal colic; in either condition there may be fever, distention of the abdominal walls, and pain. Then again, there may be cases of peritonitis accompanied by diarrhea, without fever and with very slight pain.

DR. NICHOLAS SENN, of Chicago, delivered the Address in Surgery, taking for his subject "The Surgical Treatment of Pyloric Stenosis." He divided the subject into, first, the operative treatment of cicatricial stenosis of the pyloris; second, the operative treatment of carcinoma of the pylorus. He stated that cicatricial stenosis of the pylorus frequently follows adjacent ulceration or traumatism. At first the symptoms are those of obstruction to the passage of the food, to which subsequently those of compensatory hypertrophy and dilatation of the walls of the stomach are superadded. The operative treatment of a cicatricial stricture at the pyloric extremity of the stomach consists in performing pylorectomy; in digital divulsion of the stricture through the wound in the stomach; and in the formation of a new pylorus by the pyloro-plastic operation of Heineke-Mikulicz; or, in establishing a new outlet from the stomach into the small intestine by performing a gastro-enterostomy.

Dr. Senn reported fifteen cases in which he had operated for the relief of pyloric stenosis, and presented the following propositions:

1. Pyloroplasty, as devised by Heineke-Mikulicz, is the safest and most efficient operation for cicatricial stenosis of the pylorus.

2. Pylorectomy is a justifiable procedure in the treatment of carcinoma of the pylorus when the disease is limited to the organ primarily affected, and when the patient's general health furnishes no contra-indication.

3. In the treatment of malignant stenosis of the pylorus, gastro-enterostomy, with the aid of large, moist, perforated plates of decalcified bone, should be resorted to as soon as a positive diagnosis can be made and a radical operation is contra-indicated.

(*To be continued.*)

CORRESPONDENCE.

THE TRANSMISSION FROM ONE PERSON TO ANOTHER OF THE POISON OF RHUS TOXICODENDRON.

To the Editor of THE MEDICAL NEWS,

SIR: In a contribution to THE MEDICAL NEWS (Oct. 24, 1891, p. 484), entitled "Unusual Mode of Transmission in a Case of Dermatitis Venenata," Dr. Cantrell states that he had found "but one parallel case" to the one therein reported, "wherein the disease was contracted by the mere handling of a person affected."

In 1873 (*Amer. Journ. Med. Sci.*, vol. lxvii, p. 436) I reported the following cases:

"In June, 1871, Mrs. V. suffered very severely from a burning and itching eruption covering her entire face, neck, both mammæ, external genitals, extending along the inner surface of both thighs, both hands, wrists, and portions of her abdomen. Her husband, at the same time, suffered with a similar eruption, though not so severe, on both hands, and an infant had it very slightly about the mouth and chin. A week previous to the appearance of the eruption, the husband and wife had passed an afternoon at a picnic, and he had fastened his horse to a bush covered with a vine, the character of which he had not observed. The wife did not approach the plant, and the child had been left at home."

In the commentary following the report of these and other cases, I called attention to the readiness with which the poison "can be conveyed to other parts of the body by the contact of the part which may have received the poison from the plant, and from one individual to another, even though the first may not at all, or only very slightly, suffer from its poisonous action." This conclusion was reached after an extensive, and, as I supposed, an exhaustive examination of the literature of the subject. As it is admitted that the poison may be conveyed by the hands to other parts of the body, it would seem clearly admissible that one person should transmit it to another, by actual contact, even though the first might not be susceptible to the poison.

In conclusion I recall attention to the fact, cited in the article previously referred to, that Dr. Canfield,[1] of Monterey, Cal., as early as 1859, reported the successful treatment of the disease with the local application of the balsam-like juice of the Grindelia robusta.

SAMUEL C. BUSEY.

WASHINGTON, D. C., October 27, 1891.

POISONING BY IVY AT SECOND HAND.

To the Editor of THE MEDICAL NEWS,

SIR: The case of Dr. Cantrell, reported in THE MEDICAL NEWS of October 24th, reminds me of a similar instance. Miss E. W. spent the night with her sister, Mrs. C., whose husband was obliged to be absent on business. Mr. C. had been poisoned about the head and neck with ivy a few days before leaving home. The pillow-case on which he slept was not changed, and his sister-in-law, using it, became poisoned about the face and neck in consequence thereof, no other opportunity for contracting the disease existing.

While on the subject, I would like to call attention to a plan of treatment that I have found most successful. As everyone of experience knows, the success with the ordinary remedies employed varies greatly, relief sometimes being prompt and at others most tardy. The fluid extract of Virginia snakeroot (serpentaria) is undoubtedly a specific. Applied to the irritated parts in full strength, "sopped" on, repeating the application from every two to four hours early in the attack before an eczema is engendered, it will promptly arrest the disease and act as an antidote. I have used lead-water and laudanum, solution of carbolic acid, lime-water applications, sodium solutions, grindelia robusta, and most other so-called remedies, but with none was I sure of a satisfactory result. With the serpentaria the result is certain as well as speedy. I need scarcely add that the suggestion is not original with me. Yours very truly,

J. B. WALKER.

1617 GREEN ST., PHILA., October 26, 1891.

SUPERNUMERARY FINGERS AND TOES.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS for April 13, 1889, I reported the case of a colored child that had a supernumerary digit attached by a thin pedicle to the outer side of each hand. The extra fingers were removed.

Another case was that of a white adult who had six well-developed toes on each foot, and had also, at birth, six fingers on each hand, as in the first case reported. The extra members were removed in infancy.

Since making the above report, I have observed a number of cases of supernumerary toes and fingers. Mr. N., a white man, has two children, one having six well-developed fingers on each hand and six well-developed toes on each foot; the other child having six well-developed fingers on his left hand and six well-developed toes on his left foot.

A colored woman had six children (by about as many men), each child having six fingers on each hand and six toes on each foot. The extra members, none of which were thoroughly formed, were all removed in infancy. In none of the foregoing cases were the anomalies inherited or transmitted.

Again, a colored man has been the father of seven children (six of whom had the same mother), five of whom were born with a supernumerary finger attached by a pedicle to the outside of each hand, and an extra toe attached in the same way to each foot. One child had six fingers on each hand, the feet being normal. The hands and feet of the other child were normal. All the extra fingers and toes were almost thoroughly developed, having bones, joints, and nails. The extra members were all removed without trouble. In this instance the anomaly existed in children, father, and paternal grandfather—a somewhat interesting and remarkable fact. I have made no special effort to collect these cases, they having been incidentally met with.

Very respectfully,

W. F. DREWRY, M.D.

CENTRAL LUNATIC ASYLUM, PETERSBURG, VA.

[1] American Journal of Pharmacy, vol. xxxii. p. 414.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 27 TO NOVEMBER 2, 1891.

BALL, ROBERT R., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for one month, with permission to apply for an extension of one month.

MAUS, LOUIS M., *Captain and Assistant Surgeon.*—Is relieved from duty at Whipple Barracks, Arizona Territory, and ordered to Fort Apache, Arizona Territory, for duty.

RICHARD, CHARLES, *Captain and Assistant Surgeon*—Is relieved from duty at Fort Logan, Colorado, and will report in person to the commandant of the Military Prison, Fort Leavenworth, Kansas, for duty.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 31, 1891.

HARVEY, HENRY P., *Surgeon.*—Ordered to Receiving-ship "St. Louis."

FLINT, JAMES M., *Surgeon* —Detached from the Smithsonian Institute, and ordered to the U. S. S. "Miantonomoh."

HEYL, T. C., *Surgeon.*—Detached from Receiving-ship "St. Louis," and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 24, 1891.

PURVIANCE, GEORGE, *Surgeon.*—Upon completion of duties as Chairman of Examining Board to Inspect Marine Hospitals at St. Louis, Mo.; Cairo, Ill.; and Cincinnati, Ohio, October 16, 1891.

GODFREY, JOHN, *Surgeon.*—To represent the Service at the meeting of the American Public Health Association, October 14, 1891. To inspect Marine Hospital at Louisville, Ky., October 14, 1891.

CARTER, H. R., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, October 17, 1891.

PETTUS, W. J., *Passed Assistant Surgeon.*—Orders to Norfolk, Va., revoked; to proceed to Cape Charles Quarantine for temporary duty, October 14, 1891.

KINYOUN, J. J., *Passed Assistant Surgeon.*—To represent the Service at the meeting of the American Public Health Association, October 17, 1891.

PERRY, T. B., *Passed Assistant Surgeon.*—To proceed to Norfolk, Va., for temporary duty, October 14, 1891.

GUITERAS, G. M., *Assistant Surgeon.*—To proceed to Gulf Quarantine for duty, October 20, 1891.

ROSENAU, M. J., *Assistant Surgeon.*—Granted leave of absence for thirty days, October 24, 1891.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIX. SATURDAY, NOVEMBER 14, 1891. NO. 20.

ORIGINAL ARTICLES.

A STUDY OF ATROPHY.[1]

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY, MEDICAL DEPARTMENT UNIVERSITY OF BUFFALO; SURGEON TO THE BUFFALO GENERAL HOSPITAL.

I WISH to invite your attention to an historical review of certain characteristics presented by that diminution of volume or mass of an organ or part that is described in one word, *atrophy*, and perhaps less to its pathological than to its clinical side. Strictly speaking there is a great difference between arrest of growth and atrophy in the true pathological sense of the word, and yet, as surgeons see these cases, there is at times so little apparent difference between the respective results of the two processes that we make very little clinical distinction between them. At all events, without dealing just now with minute differences, let us see what of interest a discussion of coarser features may bring out. I wish here to acknowledge no small indebtedness in this connection to a work published in 1882 by Mondan, entitled *Recherches Expérimentales et Cliniques sur les Atrophies des Membres*, which emanated from the Lyons school, and which is based largely on observations made in the clinic of Ollier, than whom no more accurate observer of such matters is known. It is a brochure little known or read, at least in this country, but it will amply repay perusal.

In Petit's *Traité des Maladies des Os*, ii. 23, we find some interesting notions concerning muscular atrophy after fractures, expressed thus: "Atrophy or diminution is an accident which supervenes, not at the beginning, but later, by enfeeblement of nerves and arteries which continue to be compressed, either by exuberant callus or by too tight bandaging. These obstacles to free circulation may cause lack of nutrition or atrophy." In 1776 John Hunter put forth his theory, according to which sympathy figured largely in the process, and in which may be found the germ of the idea of atrophy by reflex action. In 1835 Nélaton insisted upon the importance of atrophy of the thigh among the signs of hip-joint disease. He stated that the arrest of development of osseous tissue was proportional to atrophy of soft parts, and that this was a rule to which there were very few exceptions. It is also observed, he stated, not only in spontaneous luxations, but in all those diseases that condemn a limb to prolonged rest. Thus he cited atrophy of the femur in the case of a necrosis of the pelvis. These ideas are elaborated in his great work (*Path. Chir.*, 1847, ii. 264).

In 1837 Curling published his "Remarks on Certain Forms of Atrophy of Bone" (*Med.-Chir. Trans.*, 1837, p. 336), in which he described a *concentric* and an *excentric* atrophy of bone. The former depends mainly on local causes, such as consecutive dislocations, caries, inflammations resulting from gunshot fractures, etc. He included here the bone in an amputation-stump, as well as the atrophy of ankylosed limbs. He speaks of *functional inertia*, and the influence of the central nervous system by which, in paralytics, healing of fractures is delayed. He shows how compression of the main artery supplying such organs as the liver, spleen, or kidneys, will lead to their diminution, and he considers at some length the atrophy of a bone-fragment broken from a main portion which contains the principal nutrient artery. The nutritive supply in such cases cannot be maintained, owing to the inextensibility of the Haversian canals; consequently the fragment slowly disappears. Under the head of excentric atrophy he deals mainly with osteo-malacia, which is a generalized process depending upon a constitutional condition.

Bonnet was alive to the importance of atrophic processes, and in his *Traité des Mal. des Articulations*, 1845, i. 217, he wrote: "Whatever the varieties which they present, according to anatomical conditions, chronic inflammations of the synovialis consecutive to mechanical injury engender always an atrophy, more or less marked, of the surrounding parts." In general this will be noted about the injured joint, but sometimes it extends further, and may affect an entire limb. But Bonnet was, perhaps, not the first, certainly not the only one of his day, to allude to atrophy as a significant accompaniment of chronic joint-disease. Malgaigne (*Anatomie Chirurgicale*, i. 166) directed attention to disappearance of the alveolar process when deprived of its teeth, to thinning of the cranial bones after trephining, and to atrophy of the ilium and femur after old and unreduced dislocations of the hip. Even for Malgaigne functional inactivity was the cause of diminished nutrition.

In 1845 Roux put forth certain noteworthy views (*Annales de la Chirurgie*, xv.), especially with refer-

[1] Read before the American Orthopedic Association, at Washington, D. C., September 23, 1891.

ence to atrophy of the deltoid in arthritis of the shoulder. For him the stretching of the muscle over a capsule distended with fluid was the sole and sufficient cause; an analogous condition occurring also at the knee.

Denonvilliers, in 1853, presented to the Société de Chirurgie, a boy of seventeen, whose right arm had been amputated ten years previously. At the time when he was exhibited there was a protruding necrotic stump, three centimeters in length. At the same meeting Guersant reported a similar case. He asked whether this was not due to a physiological elongation of the bone rather than to any fault in the operative technique. (*Bull. de la Soc. de la Chir.*, iii. 430.)

In 1858 took place another interesting discussion in the same society concerning the growth of amputation-stumps. (*Bull. de la Soc. de la Chir.*, ix. 450.)

Seeking a cause for this fact that in young subjects the bone frequently grows through the soft parts of the stump so as to perforate them, Marjolan attributed the longitudinal growth of the bone to "a certain degree of ostitis propagated from the upper epiphysis." This explanation, accepted by Broca, was denied by Chassaignac and Richet, who explained the relatively greater growth of the fibula in leg stumps to osteophytes developed at its extremity along with necrosis of the tibial end.

Humphry (*Treatise on the Skeleton*, p. 70) in 1858 called attention to the results of disease of bone. "If a limb be not used, the bones usually waste. . . . . These points are well illustrated by the conditions which the bones of stumps present when the limbs have long been amputated. In some the bones are cleared of their cancelli and reduced to a mere porous shell, the size remaining unaltered. In others they become much reduced in circumference, their walls retaining their proper density. In a third class the bones are small, and are also light and porous. In a case recorded by Larrey, of a man who died forty-one years after amputation of the arm near the shoulder, the scapula was as thin as paper, and the clavicle no thicker than that of an infant. I am *not aware* that a bone is *ever reduced* in length as a consequence of atrophy. If a part be disused by reason of paralysis or other cause, the bones may fail to attain their proper length; but, having attained it, I do not know that they ever lose it."

In 1859 Gosselin and Lejeune published important articles concerning muscular atrophy consequent upon fractures. They claimed that it always occurs in adults, the former reporting a case in which it existed ten years after the fracture. In children it is very much less common. Gosselin ascribed a more important part in producing atrophy under these circumstances to immobilization than to compression by bandage, and says: "the condition cannot be attributed to the surgical apparatus, but depends entirely on the primary affection." (*Gazette Hebdomadaire*, 1859, 130–64.

Coulon, in 1861 (*Traité des Fractures chez les Enfants*), speaking of fractures in children, says that perhaps "scrofula," that is "scrofula of bone," may, without producing caries, so weaken the osseous tissue by rarefaction as to predispose it to fracture. He says that he had never noticed muscular atrophy in children, perhaps because of the comparatively brief time in which their bones heal; but he fails to recognize that such periods of time are only relative. Referring to experiments made by Baizeau and Herpin concerning elongation of fractured bones, he says that he has not seen sufficient clinical proofs to permit him to acknowledge such a growth. The old subject once more came up before the Société de Chirurgie in 1884 (*Bull. et Mém.*, x. 521), when Kirmisson showed an amputation-stump in a lad of twenty, whose leg had been amputated when he was four years old. At the center of the stump was a bony projection, divided into two tuberosities by a transverse fissure. One of these belonged to the tibia, the other to the fibula, both having been fused together. Faraboeuf, while not rejecting Verneuil's views, suggested that such cases might be explained by a too rapid primary union with insufficient solidity of muscle and soft tissue, and that the condition might be prevented by causing the stump to heal by granulation. All agreed that in children amputation-flaps should be made exceptionally long.

To this peculiar atrophy affecting stumps Verneuil has given the name *physiological conicity*. He describes it (*Mémoires*, ii. 830) as occurring especially in arm and leg stumps; less often in thigh and forearm, because of lesser activity of the cartilages of the upper ends of the femur, radius, and ulna. He saw a large number of examples while distributing prosthetic apparatus at the Central Bureau of the Parisian Hospitals.

These statements of Verneuil's, if not founded upon the more elaborate explanations of Humphry, at all events corroborate them. It has been shown by Humphry (*Med.-Chir. Trans.*, xliv. 118) that the extension of the shaft takes place most quickly, and is most prolonged at the end where the bone can best bear the weakening consequent on the more rapid changes in the growing matrix; and that is usually the larger end. For instance, the lower end of the femur is larger, and is more favorably circumstanced for bearing weight and resisting muscular force than the upper end; and the ossifying processes are much more active, and are longer continued at the lower end than at the upper. In the

tibia the lower end is at a disadvantage in comparison with the upper, in consequence of its smaller size, the greater weight borne by it, and the violent shocks to which it is exposed from its closer proximity to the ground, and there is less growth here than at the upper end. In the upper limb the conditions are in many respects reversed, and growth is, consequently, more active at the upper part of the arm and at the lower part of the forearm.

Numerous other writers have alluded to the same condition. In one of Liston's cases the humerus projected in an extreme degree, and terminated in a hook-like process or exostosis. The latest contribution to the subject is by C. A. Powers (*Med. Record*, June 7, 1890, p. 641), who reports several instances.

But it is to the *Traité de la Régénération des Os* of Prof. Ollier that one turns with the greatest satisfaction for the experimental elucidation of this subject. Thus we find (i. 377) a long chapter upon the influence of irritation or of removal of various parts of bones upon their growth. After having established that the most common cause of hypertrophy of bones is irritation, he studies the causes of arrest of their development and their atrophy. Two factors come into play here: the destruction of tissue which may concern and favor their growth, and gradual failure in the evolution of such tissues. They necessitate a careful study of epiphysis, diaphysis, and conjugal cartilage, which Ollier has carefully carried out experimentally, and has shown that it is not by a precocious union of epiphyses to shaft that lesions of epiphyseal cartilage produce arrest of growth, but that the initial factor is arrest of proliferation of cartilage-cells. He has, furthermore, fully described the effect of fractures, of epiphyseal separations, of arthritis, and ankylosis in producing retractive tissue-changes. Mutilations of bone almost always produce arrest of development, which yet varies much according to whether the arthrodial or conjugal cartilages, the epiphysis, or the shaft have been most interfered with. Not only in the bone operated on do tissue changes occur. In the case of the forearm and the leg the parallel bone frequently undergoes alterations; sometimes this is in the direction of increase of thickness; that is, a compensatory hypertrophy, or, when one is pretty firmly fixed to the other, the more rapid growth of one forces it to assume a curve or some change of shape.

I have recently seen such alteration in the lower end of the fibula, apparently produced in the first place by a club-foot, upon the outer side of which the patient (a girl of sixteen) walked. Pressure upon the fibula being thereby removed and a certain tension produced by pull upon the external lateral ligament, while the whole weight was borne by the tibia, The result was that the lower three inches of the fibula assumed the exact shape of the arc of a circle of some ninety degrees.

So, for instance, after resection of the radius and ulna, the humerus, though not operated upon at all, ceases to grow with the same rapidity as does that of the opposite side; and, if the humerus alone has been attacked, the scapula on one side and the radius and ulna on the other are indirectly affected. These alterations are of a peculiar nature, and do not occur immediately; they take place by a gradual transition-state, during which they diminish in volume but increase in length. To this phenomenon, which he has most carefully studied, Ollier has given the distinctive name of *atrophic elongation*.

To the atrophic changes occurring in stumps, also, Ollier has paid great attention. But little has been said or written in this regard. Since the discussion in the Société de Chirurgie in 1858, alluded to, Humphry published two memoirs, and the more recent researches of Güterbock include nearly all the literature of the subject. Nearly everyone who has dealt with the subject has alluded to the atrophy which is most marked in connection with stumps that are nearly immobile; while the clinical fact was generally recognized, the interpretation remained for Ollier to enunciate. He lays great stress on the effect of *functional inertia*, and has sought to assign its correct position among factors. By observation and by experiment he came to the conclusion that function of a limb was a necessary stimulus to the growth of its skeleton. Suppression of this stimulus leads inevitably to atrophy of the part. This was but a systematic and comprehensive statement of generally-recognized facts.

In 1870 Boeckel published an interesting memoir concerning the effects of hip-joint disease in causing atrophy of the lower limb. He formulated these conclusions:

1. That arrest of growth is proportional to functional inactivity and atrophy of muscles.

2. That the bones are rarefied, and that active treatment, while shortening the course of the disease, acts also to lessen the extent of the atrophy.

3. That pelvic distortion (posture-deformities) tends to produce arrest of growth, exaggeration of the pressure transmitted through the femur, and atrophy of the muscles of the buttock.

4. That shortening affects the superior pelvic strait, but not enough to cause a serious obstacle to parturition (*Archives de Physiologie*, 1870–71, p. 435).

A thesis by Collette, in 1872 (*Thèse de Paris*, No. 182), marked an advance, since not only did he discuss the atrophy which accompanies certain forms of joint-disease, but he called attention to the increase of fatty tissue which often accompanies wasting of other soft parts. More than this, he

showed that curious atrophic freaks occur. Thus he cites a case of gonitis with wasting of both upper and lower limbs on that side, with great increase of fatty tissue, a notable enlargement of the breast, and a marked atrophy of the testicle on that side.

In quoting this case I am reminded of a case of my own, an amputation-stump in a young woman whose thigh I amputated seven years ago, when she was sixteen years old. The stump is now not conical, though it would be were it not that an overgrowth of adipose tissue makes it measure more in circumference than does the opposite thigh at the same height.

It was in 1873 that Reyher's careful study upon the influence of prolonged immobilization upon the joints appeared (*Deutsche Zeitschrift f. Chir.*, iii. 189). His microscopical studies of the various tissues implicated gave a peculiar value to his work. He never found any inflammatory phenomena, either hyperemia or tumefaction. Consequently, the atrophic changes of the adult or aged are merely a degeneration not caused by inflammation.

Sabourin, during the same year (*Thèse de Paris*, 1873), introduced a novel theory to account for the atrophies which accompany articular rheumatism, particularly those which one encounters about the shoulder in the deltoid, according to which it was due to irritation of the peri-articular fibrous tissue. To confirm this view, he pointed to the extreme soreness in muscular origins and insertions; in other words, to the extreme tenderness of masses of fibrous tissue in the neighborhood of any rheumatic lesion. Duchenne, in particular, has described an atrophic form of deltoid rheumatism, to which Sabourin quite eagerly applies his explanation.

It was not long before confirmations of Ollier's studies began to appear. Haab, in 1875, published a brochure, in which he corroborated Ollier's views concerning the normal growth of bone, and then he mentions pathological elongation after fractures, ostitis, and arthritis, and gives some of the cases reported by German surgeons. Assigning a secondary rôle to inertia and immobilization, he lays the principal blame upon the epiphyseal cartilage. For sympathetic elongation of the femur it is enough to have an irritation of the tibia sufficiently active and lasting. Failure of pressure upon the joint is a sufficient reason in his estimation, and he proposes to substitute the expression *elongation from lack of pressure*, for Ollier's term, atrophic elongation. Haab fails to apprehend how atrophy can produce elongation. He would account for many of these bone-changes by sympathy between femur and tibia, for instance, so that one is lengthened or shortened when the other is pathologically elongated, all of which, says Mondan, while criticising these expressions, is rather incomprehensible.

During the same year appeared the essay of Güterbock (*Arch. für klin. Chir.*, xvii. 584), in which he attributed the bone atrophy of an amputation-stump to an irritative action, the evidence of which he found in the occasional presence of osteophytes, and of other tissue alterations, such as the subperiosteal development of giant-cells, as described by Rusticzky. He considers these to be the results of functional inactivity in subjects of various ages and conditions. The experiments of Milne-Edwards, published fourteen years previously (*Annal. des Sciences Naturelles*, 1861), may have some bearing in this connection, as they appear to have in the thesis of Teissier (Paris, 1875). If we deprive animals (birds) of food containing calcareous elements, the volume of their bones diminishes, but their composition does not vary. At the end of three months the bones of such animals will weigh a third less than those of one normally nourished, but analysis would show no change.

Fifteen years ago Sir James Paget made these remarks in one of his published clinical lectures (*Lect. IV.* p. 208), speaking of wastings of limbs near affected joints: "This wasting occurs quickly in nearly all acute inflammations of joints; more slowly in the chronic inflammations. In the chronic it may be from disuse alone; in the acute it is not so, for it is much more rapid and extensive than in any cases of mere disuse. Compare, for instance, cases of fracture of the thigh with those of acute disease of the hip, and you will see how much greater is the wasting with acute disease than with disuse alone. Rapid wasting may be seen in the whole lower limb, especially in the thigh and the nates, in all acute hip-joint diseases; more slow wasting in the painless scrofulous diseases; less still in the chronic rheumatic. Wasting in the lower part of the anterior and lateral muscles of the thigh is quickly apparent in acute knee-joint disease; only less quickly in the chronic. . . . . It is, I repeat, not a mere wasting from disuse; it is far more rapid than that, more like what has been called acute atrophy of muscles, such as may often be seen in the swiftest cases of infantile paralysis. . . . . It seems dependent on disordered nervous influence, and often appears proportionate to the coincident pain, as if it were due to the disturbance of some nutritive nervous center, irritated by the painful state of sensitive nerve-fibers."

Two years later appeared Valtat's excellent thesis (*De l'Atrophie musculaire consécutive aux Maladies des Articulations*), which contained the following conclusions:

1. Most joint-diseases react energetically upon the nutrition of the muscular system.

2. Very early in such cases one sees a notable atrophy with paresis, more or less accentuated, of

certain muscles, particularly those pertaining to the affected joint.

3. This atrophy is not the result of functional inertia, or of inflammation of muscles, nerves, or cord; in all probability it is produced by the same mechanism as the other reflex phenomena.

4. It is a matter of no small importance; it increases usually *pari passu* with the joint-lesion, and remains, in the vast majority of cases, after this has recovered.

5. Its duration is commonly long, and is shows no tendency to spontaneous disappearance. Sometimes the muscles recover themselves by exercise, but by no means always.

6. They improve much more rapidly under the use of the continued current, or better still under the combined usage of both currents.

The clinical phases of the subject were excellently presented by Berguien (*Thèse de Paris*, in 1877) the same year. His was the first work in which the relations between the development of the bones along with their superimposed muscles were clinically discussed. Studying fifty-nine cases of hip-disease he demonstrated that there is always atrophy of the limb in these cases, and that it pertains to the bone as well as to the muscles, especially in very young patients; that the bone-atrophy is most marked about the joint where the effects of pressure would naturally be greatest, and that it is itself due to atrophy of bloodvessels; that deficiency of nutrition can be demonstrated by the thermometer; and that in those rare cases in which atrophy does not appear one may impute the fact to a coxalgia, coming on after the eighth year, when the subjects are very courageous and seek to keep the limb in active service.

In 1877 and 1878 Helferich published memoirs of considerable importance (*Archiv. d. Phys. und d. Anat.*, Mai, 1877, and *Deutsche Zeit. f. Chir.*, 1878, x. 324). He had demonstrated by numerous experiments, and as opposed to the views of Wolff, the exclusive rôle played by the conjugal or epiphyseal cartilages in longitudinal growth of long bones. This he did by excising them from growing young animals, and noting the failure to grow. In his second paper he studied the disordered relations that exist between necrosis and the coefficient of growth of various bones; he takes up the question of the frequency of inflammation in the different parts of the same bone, and after showing that it is in the vicinity of the cartilages that it occurs most commonly, he finds here the verification of his experimental work.

Passing by a number of brochures in which appeared nothing of great importance, De Clerville republished in 1880 (*Thèse de Paris*) a remarkable case of nearly total disappearance of the humerus, first broken at the age of eighteen, and twice after that. Only the superior and inferior epiphyses were left, and these were represented by small pieces. The patient died at the age of fifty-two, and the muscles of the arm presented a remarkable atrophy and fatty degeneration. Similar cases are of course reported in the work of Béranger-Feraud, but a case of this completeness or intensity is perhaps unique. It must be attributed largely to the influence of repeated irritations upon the vitality of the callus.

Lataste (*Thèse de Paris*, 1881) propounded in 1881 a novel explanation of the muscular atrophy following fractures. For him it depended not on immobilization, or compression, or lesion of nerve-fibers, but upon a certain degree of myositis, which was evidenced by local elevation of temperature.

In 1882 Segond (*Rev. de Chir.*, Août et Sept.) described a diminution in the caliber of the vessels in amputation-stumps or curtailed limbs. This is never consecutive to muscular atrophy, but sometimes precedes, sometimes accompanies it; and is, according to Segond, a very important contributing factor.

The causes, then, so far as generally ascribed, which lead to atrophy of parts, may be thus rehearsed:

a. Functional inertia.
b. Inequality or defect of nutritive supply.
c. Inflammation.
d. Something in the general condition.
e. Trophic-nerve disturbance.

These have been thus arranged by Mondan.

Within the present year Duplay and Cazin have published (*Archives Générales de Médecine*, Jan., 1891) the results of certain experimental researches into the nature and origin of muscular atrophies following diseases of joints, stating that of all the various theories advanced to explain atrophy of muscles following joint-lesions the "reflex" theory of Vulpian has found the most general acceptance, *i. e.*, changes originating in the irritated terminations of the articular filaments. This theory explains the rapidity of onset and the absence of the reaction of degeneration, either in the cord or in the large nerves. In their researches acute arthritis of the knee was produced by the injection of tincture of iodine or nitrate of silver, or by the actual cautery. In four or five days an appreciable diminution in size of muscles was invariably noticed; in eight or ten days they had become soft, and the atrophy steadily progressed until about the fifteenth day, when it either ceased or progressed much more slowly. The animals were killed at intervals up to the thirtieth day, when the various muscles of the healthy and affected limbs were carefully weighed. The loss of weight amounted in some cases to 50 per cent. Microscopic examination of the nerves of

these limbs shows that no lesion is usually present in the large trunks or in the motor filaments, but in articular nerves characteristic changes were constantly present. These changes are partly degenerative and partly inflammatory; they never show signs of spreading upward along the nerve-trunk, and no ascending lesion, such as has been described after amputations, could in any case be discovered, nor were there any alterations in the spinal cord, or nerve-roots, or ganglia.

The authors consequently deduce the following two conclusions: 1. That the muscular wasting following muscular lesions tells of a simple atrophy. 2. That this atrophy can be explained only by reflex action through the spinal cord, produced by the irritation of the terminal filaments of the articular nerve.

This appears to summarize fairly well the valuable literature of the century concerning an important topic. Such special attention as the writer had intended to devote to a further elucidation of Ollier's views on *atrophic elongation*, and a summary of his experimental work, will have to be postponed to another occasion, and made the topic for another communication.

EPILEPTIC INSANITY: ITS ETIOLOGY, COURSE, AND TREATMENT, BASED ON THE OBSERVATION OF ONE HUNDRED CASES.[1]

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In speaking of epileptic insanity, I would follow the definition of W. Bevan Lewis, given in his late work on *Mental Diseases*, viz.: "that form of mental derangement in the antecedent history, oncome, and further development of which we recognize an intimate connection with the epileptic neurosis." The distinction between epilepsy and epileptic insanity is often difficult, if not impossible, since, pathologically, we have the same ill-defined conditions present in each; and, as Lewis has well said, the question must often be asked in an asylum why such a patient is confined. Indeed, we find many in whom epileptic seizures occur only at rare intervals, and of whom the condition in the interparoxysmal state is apparently normal, but who during the paroxysms are maniacal, melancholic, and demented.

In our study of epileptic insanity we must proceed on the same lines as in that of the neurosis. We may, in fact, consider the insanity as a mental condition to which all epileptics are liable, and, while mental impairment is often not present in many cases during the intervals between the attacks, yet, from experience, I am inclined to think that it is more usually present than generally stated, because, while some examples of even great mental brilliancy may no doubt present themselves to the experience of all, the great majority show evidence of mental deterioration. The character becomes more or less brutal—even the face shows loss of the finer elements—and the emotional state, at least, becomes very unstable, making the individuals uncertain, impulsive, and usually suspicious. The most important element in epilepsy is the disturbance of the consciousness, especially when sudden in its onset. It stands out as the real diagnostic symptom of the disease. This indicates essentially an affection of the cortex of the brain, to which, if we are to discover its pathological basis, future study must be directed. The convulsions are of secondary importance, as they may be due to various irritative lesions of the brain, which may cause the same characteristics and distribution of the convulsions as occur in epilepsy, and yet have none, or few, of the peculiar mental disturbances seen in epileptic insanity. In fact, in cases of epilepsy of the so-called *petit mal* type, without convulsions, mental derangement is more common, and the prognosis is worse than in the *grand mal* type.

All forms of insanity have certain varieties of symptoms in common. In the first place, there is always a change in the personality; the relations of the individual or *ego* to the outer world are altered. There is always a concentration of the attention on the *ego*. We next observe some change in the feelings, thoughts, and actions, and usually first in reference to the feelings, which may be manifested by exaltation or depression; later, as a rule, in the thoughts, as represented by hallucinations, illusions, and delusions, these latter often arising in the attempt of the patient to explain to himself the reason of his changed emotions and altered relations to his surroundings. The last condition, as referred to the field of action or volition, is a natural outcome of the preceding, as thought cannot be known to exist without its expression in some act. The only other condition common, sooner or later, in insanity is dementia, which, when complete, represents a total abolition of the expression of the functions of the mind. In epileptic insanity we have all these functions more or less involved, and while each case differs from the others, yet in the aggregate certain well-defined characteristics stand prominently out. These may precede or follow the epileptic seizures, or even take their place, as in the *petit mal* form of epilepsy. In the study of this subject it is, therefore, necessary, in each case to get as full a description as possible of the premonitory

[1] Read before the N. Y. Co. Med. Soc., May 25, 1891.

symptoms preceding the paroxysm, of the paroxysm itself, and of the post-paroxysmal symptoms, as well as the condition between the seizures. As we shall see in our summary of the hundred cases that I have investigated for this paper, the premonitory symptoms may exist for a considerable time before the epileptic convulsion occurs, for hours, days, or weeks, and may assume the form of restlessness, illusion, delusion, or even sensory disturbance, so that one acquainted with the patient may be able to prognosticate an approaching seizure. The aura of epigastric discomfort is the most common, and the onset of the attack is usually very sudden, no warning, or one of but short duration, being the rule. On entering an epileptic ward it is not uncommon, if one patient has an attack, to see several instantly fall with the suddenness of an explosion.

In the study of my cases it has been very difficult to obtain any reliable previous history. A history of heredity—by which I mean either insanity or epilepsy in the parents or immediate family—was obtained in fifteen cases. Echeverhia places it at 28 per cent., while Reynolds puts it as high as from 31 to 53 per cent. Phthisis was present in the parents in seven cases. In the male cases, alcoholism—that is, excessive use of liquor—was given as the cause in nine cases; none in the females. Shock was noted in six cases among the females; insolation in three cases in the men; trauma in three cases in both the males and females. The history of epilepsy from childhood or infancy was given in twelve cases in the women, and nineteen in the men, with an indefinite account of a fall in some cases. Upon examining the cases with reference to the exciting causes of the seizures, in the sixty cases of women, the menstrual period in sixteen cases was either the only time of their attacks, during which they often were very frequent (in one case 100 attacks occurring in six hours), or they were increased at these times. A premonitory stage or pre-paroxysmal period was more frequent in the women, as shown by restlessness and irritability, existing often for days. A definite aura was rare: In the forty male cases its existence was only recorded in seven cases, and in three cases among the women. Those given were of the epigastric character, except in the case of one woman, who always complained of a sore throat, after which she became maniacally violent, requiring restraint. These figures are not perfectly accurate, but the dementia of many of the cases rendered it impossible to obtain more exact histories. It, however, approximates the general statements of the suddenness of the onset of the attacks in the epileptic insane. The character of the seizures is the same as in the neurosis, except that they are rarely unilateral. The mental condition following or preceding a seizure, and in the intermediate state, is what characterizes the disease. Masked epilepsy, or *epilepsie larvée*, in which mental derangement takes the place of the epileptic seizure, was not present in any of my cases, although attacks of *petit mal*, with excitement or depression, were not uncommon. The number of attacks varied from one to thirty a month, in the women seeming to be frequently increased at the menstrual period, and in most cases were both nocturnal and diurnal, rarely being limited to one or the other period. The attacks were usually both of the *petit mal* and *grand mal* type, the latter being only referred to in the number of attacks per month recorded. Mania or violence with assault, usually following the attacks, was present in fourteen cases of the women, and in twelve of the men; homicidal mania was recorded in nine cases of the women; melancholia, with suicidal attempts, was present in thirteen cases of women, while it was comparatively rare in men. Delusions of persecution were not uncommon, especially in the women; hallucinations were rare. Religious ideas of an emotional character were present in eleven male cases. What has been termed "religiosity" was very common among the women. Fully 50 per cent. were demented, and during the periods between the seizures many others on the slightest provocation showed great irritability. Perhaps no class of patients presents such sudden and violent outbursts as the epileptic insane, who, on coming out of a convulsion, often attack the nearest person; or after a mild seizure, perhaps under the influence of some delusion of persecution or fear, attempt to kill themselves or others. It is not unusual for them to associate the physician or nurse as the persecutor, or as one who has attempted to poison them, and they may under this delusion refuse all medicine or food. One marked symptom in most of these cases was the absolute unreliability of their statements; accusations of cruelty on the part of their attendants, and statements of being starved, are of frequent occurrence, often leading to investigation. In one case, a woman, after an attack, violently assaulted another equally irritable patient, and in the efforts to restrain her a bruising and discoloration of the arm was occasioned. She complained that she had been brutally treated and half-starved—an example of the untruthfulness of many of these patients. Fortunately, sufficient testimony was obtainable to disprove the first statement, and her generally well-nourished condition refuted the latter.

We have, as we see in the record of these cases, the physical and the psychical side, and it is the latter that principally interests us. The disease, then, represents a psychical entity, the chief characteristics of which are: (1) Irritability, as shown in excessive mental instability, often of a religious or erotic type;

(2) periodical attacks of mania or melancholia, with or without convulsions, accompanied by delusions of persecution, and a marked tendency to impulsive acts, rendering the patients dangerous to themselves and others; and (3) an early or late dementia.

The duration of the disease as revealed by these cases is interesting, as showing its chronic course, the longest being forty-four years, and the majority extending over from ten to twenty years. Most of them, also, had been epileptic for a number of years before their admission.

My paper was intended to be a clinical report of the cases that have come under my observation, and I shall not, therefore, go into the pathology. I would like, however, to refer to the investigations of Bevan Lewis in his late work, in which he claims to find degeneration, especially involving the small pyramidal layer of cells in the cortex of the brain, and consisting of fatty degeneration of the cell-nucleus with later changes, causing vacuolation. The cortex of the brain is certainly the seat of the pathological changes in epilepsy, and it is to it, as I have previously said, that we must direct our attention in our future studies.

Clouston states that epileptic insanity is not so common among women as in men, and does not respond so readily to treatment by the bromides. One feature—suicidal impulse—seems to have been quite frequent in my cases, and especially among the women. This is not common, according to Clouston and Cullerre, although both writers recount several cases. One peculiarity is the similarity, and even the exact reproduction of the same class of symptoms in each attack. In the case of the woman whose seizures always commenced with a complaint on her part of pain or soreness of the throat (which on examination revealed no local signs of disease), she soon after falls in a fit, and her first act on partially recovering consciousness is to attack the nurse. Of this she has afterward absolutely no knowledge. The attacks have always followed this course for the past three years. Automatic action is not rare, although only observed in one of the cases in which the patient after the attack always attempted to hide herself under the bed. In this case, associated with dementia, it was impossible to discover that any delusion prompted her to the act. In a case under outside care the patient would carry out various business transactions, receiving money, and paying it out, only later to find herself in her room without the slightest recollection of the acts performed.

As shown in the study of these cases, the prognosis is unfavorable. Under proper care, however, much improvement can be achieved. It is certain that the routine of asylum life, with the regular occupation, exercise, and uniformity of diet, has a favorable influence. The bromides given in sufficient doses will diminish the frequency of seizures very considerably. In the maniacal seizures, hyoscyamine, with or without morphine, hypodermatically, is to be recommended, or chloral in large doses during the periods of excitement, and especially is this advisable at the menstrual periods. As in epilepsy, the patient should be kept constantly under the influence of the bromides, except in cases in which the attacks occur only at long intervals; and while the administration of the bromides and chloral cannot prevent the attack at the period of its onset, it is advisable following the seizure, so as to insure or prolong the tendency to sleep that follows the exhaustion consequent on the explosion of nerve-force. Clouston states that he was able to reduce the attacks to one-sixth of their usual number, while the nervous and mental irritability and tendency to violence were also diminished. My personal experience has convinced me that the bromides, when sufficiently diluted, are well borne, and that the tendency is to bear them better as the length of time of administration increases. In only a comparatively few cases did evil results ensue. After many trials borax has failed in my hands. Nitro-glycerin, in conjunction with the bromides, especially in the *petit mal* type, is certainly of service. The diet should be a mixed one, and while restricting the consumption of meat I have not found it of advantage, either in hospital or private practice, to cut meat off altogether. Occupation, physical and mental, is of great importance. The patient's time should be employed. Operative interference, unless a definitely localized lesion can be diagnosticated, is not warrantable, and even in such cases other changes have occurred, if the course of the disease has become chronic, that render any likelihood of improvement improbable. Since the foregoing was written one of the patients in the list has been operated on, and I will incorporate his history:

A., thirty years of age, received an injury at the age of two years, on the right side of the head, over the motor area, since which time he gives a history of epileptic seizures, commencing on the opposite side, and becoming general. Examination reveals a marked depression in the skull, over the motor area, some paresis of the left upper and lower extremities, with exaggerated reflexes. The attacks occur almost daily; the patient is partially demented, and given to excessive masturbation. The operation consisted in the removal of a large area of the skull. The dura, pia, and cortex appeared normal to the eye, although the pulsation on this half of the brain seemed somewhat restricted. The patient made a good recovery, and his general health seemed improved. The attacks were at first reduced in number, but later resumed their usual frequency. The

only change observed was that the patient became very religious, constantly reading his prayer-book, and also inclined to steal anything he could lay his hands on, without regard to its value or usefulness to himself. These latter symptoms, of themselves so very common among epileptics, had not previously been observed.

It would seem, then, that the mental deterioration had been hastened rather than checked. Notwithstanding the failure in this case, I would indorse the operation in children, especially in cases of cerebral hemiplegia with epilepsy and imbecility. I believe that the earlier the operation is performed the greater is the chance of improvement, especially in cases in which the disease is due to cerebral compression from a tedious or forceps delivery, or following an injury, or after the exanthematous fevers. This is a new field, and the results so far have not been very favorable, but the generally hopeless character of the cases warrants considerable experimental investigation, based of course on scientific grounds.

I do not suppose that any new statement has been made in the record of these cases, and their interest lies chiefly in the observation of so many, with an attempt at classification of the mass of symptoms that they presented.

WHO CAN BE MEDICAL EXPERTS?

By HENRY A. RILEY, Esq.,
of New York.

The importance of medical evidence is acknowledged by all writers on jurisprudence and by everyone who is conversant with the profound problems that often come before courts of justice for solution. The trustworthiness of much of the so-called expert evidence that is brought out, even in the most famous trials, is not, however, so apparent and so readily acknowledged.

There is no doubt that a strong prejudice exists among the members of the bar and the judges themselves against such evidence, and the public press frequently expresses the contempt which the common people have toward this kind of evidence. Even among physicians themselves it seems certain that there is great dissatisfaction with medical expert evidence as we see it exemplified to-day on the witness-stand.

Some of the adverse opinions expressed by judges are ill-considered and unjust in the extravagance of their condemnation; but the statement of Justice Grier of the United States Supreme Court is no doubt held by many others. He says: "Experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount; and it often occurs that not only many days, but even weeks, are consumed in cross-examinations to test the skill or knowledge of such witnesses and the correctness of their opinions, wasting the time and wearying the patience of both the Court and the jury, and perplexing instead of elucidating the question involved in the issue." Justice Stephen, whose recent retirement from the English Bench has deprived it of one of its most learned judges, gave utterance, in the celebrated trial of Mrs. Maybrick, to one of the severest criticisms of recent years. He even flippantly quoted the old saying which described a doctor as "a man who passed his time in putting drugs, of which he knew little, into a body, of which he knew less," and said that the fact that a learned man came into court and "swore to this, that, and the other, did not by any means give a reason for unqualified belief in what he said."

On the other hand, many judges have expressed their high opinion of the great help afforded courts and juries by the carefully considered and impartial statements of scientific experts, who have a thorough knowledge of the technical points involved, and no less an authority on evidence than Best has given his opinion as follows: "It would not be easy to overrate the value of the evidence given in many difficult and delicate inquiries, not only by medical men and physiologists, but by learned and experienced persons in various branches of science, art, and trade."

In fact, it would be impossible for juries to give any intelligent verdict in many civil and criminal cases if it were not for the clear and convincing testimony of medical experts. Take, for instance, the recent trial of "Frenchy" in New York City for the murder of the woman called "Shakespeare," in which it would seem that medical expertism had shown a decided advance. In this case the conviction very largely hinged upon the chemical analysis of the contents of the woman's stomach and intestines, and the comparison with scrapings from the clothes and fingers of the accused man.

There is clearly no doubt that scientific witnesses will be required in the future, as in the past, for the elucidation of doubtful technical points, and it becomes a very important question to know who can be received as medical experts. Such persons have had a recognized position in the English witness-box for hundreds of years, and it was the eminent jurist Coke who pronounced the judgment, *Cuilibet in sua arte perito est credendum.* The propriety of this prohibition to all who are not skilled in their profession has been abundantly verified in the course of litigation since his time, and the ignoramus or the charlatan that ventures to air his opinions only brings disgrace on himself and his profession. Dr. Elwell, in his well-known work on *Malpractice, Medical Evidence, and Insanity*, says in regard to this matter: "While but little, compara-

tively, is expected of timid ignorance or weak and trembling inexperience, much, very much, is rightfully required and looked for from the learned and public man. If the former are able to command presence of mind and language sufficiently intelligible to be understood, it is as much or more than is expected of them. Not so, however, with the man of public and professional pretensions. He is measured properly by a different and more exact and rigid rule. If he fails to furnish good measure, he will most certainly leave the stand disgraced, and his friends chagrined and disappointed. There is no situation, perhaps, where the professional medical man can be placed wherein he will be subjected to a more thorough, rigid, and severe criticism as to what he says, how he says it, and the reason why he says it, with all the influences that may have a bearing on what he says, than as a medical witness in a court of justice, under the eagle eye of an able judge, the severe and interested scrutiny of counsel, and the candid and impartial observation of a jury. This is not only forcibly true as to the position of the medical witness, but is almost savagely so. On the one hand, the party by and for whom he is called seems to expect that he will say nothing that will damage him; that the weight of his character, professional reputation, position, influence—everything will all go to favor his interests; while, on the other hand, this very weight of character, influence, etc., will arouse the resisting energies of the opposite party to contradict, break down, and destroy the effect of such testimony. An important witness thus placed between two fires, as it were—a conspicuous mark as he is—will do well if he comes off without being badly wounded."

The very title of expert seems to demand superior knowledge and a practical experience in his chosen profession, but courts have not always insisted on the possession of both practical and theoretical knowledge as a preliminary to giving testimony. A person may make himself competent to testify as an expert who has gained a special knowledge of the particular subject under investigation by the reading and study of standard authorities, and not from experience and actual observation. The expert must be educated by the science of medicine, but his knowledge may have been obtained by study without practice, or by practice without study, if that is possible. In other words, unless there is a statute in the particular State to the contrary, the expert has only to make his knowledge evident, the source from which it was obtained not being material.

The rule has been broadly stated as follows: "It is not necessary that he should be a physician or have studied for one, nor be a graduate, nor one licensed to practice, nor need he have been a practitioner" (Rogers on *Law and Medical Men*, p. 111). This general rule has been somewhat modified by decisions in the various States. In Vermont (Fairchild *vs.* Bascomb, 35 Vt., 410) it has been held that mere education as a physician, without some practice as such, is insufficient to qualify one as an expert, and in Arkansas (Polk *vs.* State, 36 Ark., 117) competency must be shown both from study and experience. In New York (Roberts *vs.* Johnson, 58 N. Y., 613) a physician not in active practice at the time may give expert evidence, but this fact will tend to affect his credit. In general, it may be said that a person who has not become a physician by the ordinary methods of graduation and licensure, or who, not being a physician at all, attempts to give expert evidence, will have little weight given to his testimony, even though he may gain admittance to the witness-stand. A person cannot qualify himself as an expert in a particular case merely by devoting himself to the study of authorities for the purposes of that case, when such reading and study is not in the line of his special calling or profession, and is entered upon to enable him to testify in the case.

An illustration of the rule that the expert need not be a physician is seen in a California case (*Re* Toomes, 54 Cal., 575), where a priest who had made a special study of physiology and psychology in order to be able to judge of the mental conditions of the communicants in his Church, and had experience daily in this way, was allowed to give an opinion of the mental state of a woman whom he had attended in her last illness.

The cases are rare, however, where a person who has not passed through a regular course of medical training is allowed to testify as a medical expert, and few lawyers would venture to place such a person on the stand, knowing what a merciless attack would be made upon him by the opposing counsel, should it appear that the so-called expert had not received the best instruction on the subject he claimed to give information about. So decided is this tendency toward requiring the most comprehensive knowledge on the part of the expert that specialists are usually called when a particular point in medical science is to be elucidated. This is not, however, a necessary requirement, as general practitioners are assumed to have sufficient knowledge to testify upon questions that are strictly and legitimately connected with their profession. Thus, one not an oculist can give an opinion in regard to injuries to the eye (Castner *vs.* Sliker, 33 N. J., 97), and one not an alienist can testify in regard to insanity (State *vs.* Reddick, 7 Kan., 143).

If the witness is not a specialist, however, his opinions will be received with less weight than if he were an acknowledged authority in the more limited

branch of medical science. There are some decisions that trend in the opposite direction, but they are not numerous, and show that special circumstances served to sway the court. Thus, in Vermont, a physician who for more than thirty years has devoted his attention almost exclusively to the treatment of insane persons cannot be permitted, as an expert, to testify to the mental capacity of a person not previously insane, but in the last stages of disease (Fairchild *vs.* Bascom, 35 Vt., 398). In Massachusetts a physician who has not made the subject of insanity a special study, and who, when his patients require medical treatment for insanity, is in the habit of calling on a physician who makes insanity a specialty, or recommending the removal to an insane asylum, is not competent to give an opinion on a hypothetical case put to him (Com. *vs.* Rich, 4 Gray, 335, 337).

When the question of the possession of special knowledge sufficient to entitle a person to testify as an expert is under consideration, the standard of qualification required by the court will vary in different localities. Thus, in a case tried by a judge in a country district distant from the large cities, the same high standard of special knowledge would not be required as in the cities of New York or Philadelphia. An interesting case involving this point was decided in Iowa over ten years ago, and merits quoting quite at length. In this case the defendant was charged with poisoning his wife by means of strychnine, and the judgment of the court was as follows: "Two physicians were called, and testified as to the tests applied in the chemical analysis made of the stomach of the deceased, and also of the tests usually applied for detecting the existence of poison in such cases. Both of them testified that they were practising physicians. One of them stated that he was not a professional chemist, but understood some of the practical details of chemistry—that portion at least which pertained to his profession—that he had no practical experience in the analysis of poisons until, in connection with Dr. Francis, he analyzed the contents of the stomach of the deceased; that since that time he had conducted experiments on a small scale; and that he was previously acquainted with the means of detecting poisons, and had since had some experience in that way. The other testified that he was not a practical chemist; that he did not follow the science as a profession; that he understood the chemical tests by which the presence of strychnine can be detected; that he professed to understand the principles of chemistry as laid down in the books on that science; that he never experimented with a view to detect strychnine by chemical tests; that he had seen experiments by professors of chemistry; and that there was one test much relied on, the trial of which he had witnessed. Defendant objected to these witnesses as incompetent, and now urges that they did not show themselves possessed of the requisite professional skill.

"We think they were competent witnesses. It is, of course, desirable that great caution should be exercised in conducting experiments of this character, and that the most skilful professional aid should be secured. If conducted, however, by such as have not had experience, or by those who, though not practical chemists, give their opinions from knowledge derived from the books upon that science, such opinion would be entitled to less weight than if given by a practical chemist—he who bases his conclusions upon experience as well as books. The means of knowledge are proper to be considered by the jury, and they should give or withhold credence in the opinion given as they may believe the expert qualified to speak more or less intelligently and understandingly. But to say that none shall be permitted to give their opinions except those of the highest professional skill, or those who have given their lives to chemical experiments, would, in this country at least, render it impossible in most cases to find the requisite skill and ability."

In a case decided in Alabama (Washington *vs.* Cole, 6 Ala., 212), a physician stated in his deposition that he attended a negro "as a physician," and it was held that this was sufficient evidence that he was a physician to warrant the admission of his opinions in evidence regarding the disease of the negro.

An important point for consideration is how the question of the possession of sufficient knowledge to entitle a person to testify as an expert is to be decided.

This is a matter of fact to be decided by the judge, and not by the jury, and such decision will not be interfered with on appeal, except in a clear and strong case (Lorg *vs.* First German Congregation, 63 Pa. St., 156; Hills *vs.* Home Ins. Co., 129 Mass., 544–551).

If the proposed expert is not able to establish the fact of special knowledge or skill, he will not be allowed to testify, and the court may personally examine such witness in order to ascertain his qualifications, or may hear evidence on the point (Lester *vs.* Pittsford, 7 Vt., 161; Boardman *vs.* Woodman, 47 N. H., 121; Davis *vs.* State, 35 Ind., 496).

In one case in Indiana (Forgery *vs.* First Nat. Bank, 66 Ind., 123–125) the Supreme Court said: "We find no test laid down by which we can determine with mathematical precision just how much experience a witness must have had, how expert, in short, he must be, to render him competent to testify as an expert."

The court must exercise a fair discretion in de-

ciding on the qualifications of an expert, and from such a decision there is no appeal.

The courts do not allow the point that an expert belongs to a particular school or system of medicine to have weight in deciding his right to testify. The law does not recognize any single class of practitioners as alone entitled to be called "physicians," but all are equal (Corsi *vs.* Maretzek, 4 E. D. Smith, 1).

TRACTION AND FIXATION IN POTT'S DISEASE.[1]

BY REGINALD H. SAYRE, M.D.,
OF NEW YORK.

ONE of the fundamental principles in the treatment of all joint-diseases is, so far as possible, to secure the absence of traumatism. In the spine, traumatism may be caused, first, by movements of the diseased parts; second, by the weight of those parts of the body, when erect, that are above the point of disease; third, by jars, when walking; and last, by the reflex muscular spasm common to joint-disease wherever situated. This muscular spasm is an effort on the part of Nature to secure rest for the diseased joint, and when an apparatus, or the surgeon's hand, or any other means secures this rest, this reflex muscular spasm disappears. The care shown in the gait of patients with Pott's disease, and the frequency with which they support the weight of the upper part of the body by resting their hands on the seat of the chair, etc., point most clearly to the necessity of relieving the diseased spine from the superincumbent weight, and protecting it as far as possible from concussion.

Pott recognized the necessity for preventing concussion, and removing the weight of the upper part of the body, but the rest in bed that he advocated, though certainly very beneficial, gives but very imperfect rest to the diseased spine, as it does not prevent motion, or abolish reflex muscular spasm.

The addition of a posterior splint of metal or other material, fastened into position by straps around the shoulders, and an apron across the chest and belly, more or less completely prevents movement of the diseased joint, but is defective in not supplying traction to overcome the ever-present reflex muscular spasm. Another objection to this class of splints is that the trunk must be so tightly girdled, in order to give rest to the spine, that respiration is greatly impeded, and, in consequence, the nutrition of the patient suffers.

Pain is to my mind a symptom of irritation, and the relief of pain is a good index of the removal of the source of irritation. The means that gives the greatest freedom from pain most thoroughly removes the source of irritation and puts the patient in the best condition to recover.

In all joint-diseases, traction, in my experience, is a great reliever of pain, and I consider it a mistake to disregard it in the treatment of Pott's disease. I frequently see children insist on keeping the straps of their jury-mast so tight that it is very difficult to prevent galling of the chin and occiput from constant pressure, and yet these children beg to have their straps fastened again when they have been loosened to bathe the head, the pain caused by these chafes being so much less than that caused by the irritation of the spine when the traction is diminished. I have seen these same children, later on, when the inflammation of the spine was less acute, ask to have the straps of the jury-mast loosened, and, still later on, ask to have them removed altogether, the necessity for employing traction having passed by.

A patient of mine, an adult of great intelligence, with lumbar Pott's disease, who was confined to his bed for eighteen months prior to the application of a plaster-of-Paris jacket, has often spoken to me of the relief afforded by stretching his spine. I have seen him drive over rough pavements in his jacket, without the least pain, at a time when he was obliged to use the utmost caution in movement in bed with his jacket off. Some of the jackets I have made for him have failed to give relief, as they did not lift up the thorax sufficiently to protect the diseased lumbar spine, though they were adequate to prevent motion. He says that he is not comfortable unless the trunk rests in the jacket, and the weight is thus transmitted to the pelvis, without pressing on the diseased part of his spine. I cannot help thinking that the more effectually we remove the weight from the spine in all cases, the more efficiently we have protected the patient.

It is because they act by lifting off the superincumbent weight more effectually than other means that I prefer jackets passing completely around the body, to posterior supports, which act merely by preventing motion, and do not diminish concussion or lift off superincumbent weight, unless they are provided with jury-masts. Those that are provided with the latter are almost invariably defective in having no base of support on which the splint may rest, and are prevented from slipping down, when traction is made on the head, simply by the friction of the splint on the body. This friction is distributed both above and below the point of disease, and thus adds to the pressure made on the diseased point, which becomes greater in proportion to the extent to which the straps of the jury-mast are tightened. In a badly-fitting plaster-of-Paris jacket the same trouble appears, and I have seen numbers of plaster jackets the jury-masts of which were fitted with

[1] Read before the American Orthopedic Association, Washington, September, 24, 1891.

pads under the joint where the crossbar was riveted, with the purpose, I suppose, of preventing injury to the head when the jury-mast rested on the child's crown. It is obvious that a child carrying a jacket of this kind receives no benefit from traction, but simply carries around on its inflamed spine the weight of the jacket and jury-mast, in addition to the weight of that part of its body that lies above the point of disease.

In upper dorsal disease, the point of inflammation is too high for the jacket to exercise sufficient control over movement, and for this reason I think that jackets are inferior to posterior metal supports fitted to pelvic belts that have bands passing above the crests of the ilia to form a base of support, so that traction by a jury-mast may be effective. In addition to this, there should be curved metal bars passing from a plate that rests against the scapulæ under the axillæ to the front of the shoulder, where padded metal plates should make pressure, in order to prevent the shoulders from dropping forward, and thus causing the chest to sink in.

Straps passing around the shoulders are not effective, and the point of pressure in front must be the head of humerus.

In cervical disease, also, if there be no time to have a suitable metal one made, the jacket is useful merely as a base of support for the jury-mast.

In lower dorsal and lumbar disease, however, for the reasons that I have mentioned, I think that jackets enveloping the body are more effective in giving rest to the inflamed area than posterior supports, as the latter exercise no upward traction, but simply bend the body backward, making a fulcrum of the posterior part of the spine opposite the point of disease, which they endeavor to separate, in the same way as a hinge is opened.

The more accurately a jacket fits, the better, and hence I prefer those made on the patient to those made over moulds made from the patient's jacket, as the second one is not so sharp in outline as the first, and, in small, skinny children it is often very difficult to get accuracy of fit, especially when there is great deformity. Very little changes make the difference in having a jacket that will not slip over the hips, and one that will so slide when the jury-mast is tight. For making the original jacket on the patient, I have found nothing so satisfactory as plaster-of-Paris.

In closing, I would say that if, because of sores or because the ilium is too small to afford a base of support, the case is not suitable to be treated in a jacket, I believe traction in bed by head-straps and weight and pulley, or by elastic, or, better still, by means of the portable wire cuirass, should be used, and, in all cases of paraplegia in Pott's disease, I would make faithful trial of traction and counter-irritation before proceeding to resection of the laminæ.

In making traction, I should be guided by the feelings of the patient. To use my father's words when he introduced plaster-of-Paris jackets seventeen years ago: "Raise the patient until he is comfortable; there stop, and keep him so."

SO-CALLED STRUMOUS INGUINAL LYMPHADENITIS.[1]

BY L. T. RIESMEYER, M.D.,
OF ST. LOUIS, MO.

THE pathology of the chronic forms of inguinal lymphadenitis is still a disputed question. I incline to the view of Culvert (Eulenburg's *Encyclopedia*) and Klotz (*Berlin. klin. Wochenschr.*, 1891), that the majority of cases known under the names of strumous buboes, indolent sympathetic buboes, hyperplastic lymphadenitis, etc., are caused by the absorption of pyogenic material and are not due to scrofula, tuberculosis, or syphilis. Of forty-three cases that I have observed, the majority had suffered from gonorrhea from six months to five years before they presented themselves. Three patients had chancroids, and one also a syphilitic chancre, a number of months before they came to be treated for the lymphadenitis. In five cases the swelling in the groin was attributed by the patient to the lifting of a heavy load, while for the rest no cause was ascertainable.

As a rule, the patients came during the later stages of the disease and presented the following symptoms: Face pale and ash-colored, loss of appetite, a tired feeling, pains in the limbs, chilly sensations alternating with sensations of heat, night-sweats. Temperature varying between 100° and 102° F.

Upon examination a large, nodular tumor, irregular in form, often fluctuating at one or more points, is found in one or both groins. The skin covering the tumor is, in contradistinction to the virulent bubo, of a livid, blue color, and is not infrequently perforated by one or more fistulous tracts. There is usually but little pain upon pressure. *In all cases the glands contained a great many miliary abscesses*, otherwise showing only a hyperplasia of the connective tissue and the medullary lymphatic tissue. Of microörganisms, staphylococci and streptococci were found. Hypertrophied lymphatic vessels run over and through the substance of the tumor. In some cases the glands presented one large fungous mass, in which no individual gland could be made out. The time required for the development of the tumor as described varied between six months and three years. No tuberculosis was found among

[1] Abstract of a paper read at the meeting of the Mississippi Valley Medical Association at St. Louis, Mo., October 14, 1891.

the cases and after the operation the patients presented a strong and healthy appearance. Strict antisepsis or asepsis is necessary in the extirpation of the glands, on account of the important structures in the neighborhood of the inflammatory focus. If the glands are not removed before the pus has broken through the capsule, the patients are exposed to the following dangers: hemorrhage and gangrene, in consequence of erosion of the femoral vein; deep abscesses of the thigh and pelvis and retroperitoneal abscesses; coxitis and gangrene of the scrotum, peritonitis, septicemia, and pyemia.

In one case serious complications were observed, namely, a deep abscess of the thigh, a pelvic abscess, and very extensive gangrene of the scrotum. The whole anterior half of the scrotum and part of the septum sloughed away, and for two weeks the temperature varied between 101° and 105° F. Three years later the patient was well; he had no inconvenience from cicatrical contraction of the scrotum, although no plastic operation or skin-grafting had been done, showing that the loss of one-half of the scrotum may not necessitate a plastic operation.

To extirpate the glands, the method recommended by Poelchen (Langenbeck's *Archiv. für klin. Chirurg.*), of first exposing the internal saphenous vein by a vertical incision and dissecting along this vessel, leaving it intact upon the fascia lata, is the most rational. The glands are in this way removed quickly and without endangering the femoral vessels. In conjunction with Dr. L. P. Pollmann, I have had occasion to locate this vessel topographically. After determining the location of the femoral artery in the usual manner, the internal saphenous vein is found exactly at the point of union of the external with the middle third of a straight line connecting the pubic spine with the point of intersection of Poupart's ligament with the femoral artery.

MEDICAL PROGRESS.

Operative Treatment of Traumatic Cortical Epilepsy.—BENDA (*Deutsche medicin. Wochenschr.*, September 3, 1891), before the Congress of German Surgeons, reported the case of a soldier, twenty years old, with no neurotic family history, who, a year and a half after a fall from a horse, attended with injury in the left parietal region, suddenly, while at work, lost consciousness. Subsequently there developed headache and pain, referred to the cicatrix of the previous wound; then apathy and weeping. These manifestations augmented in intensity, until finally syncopal and hysterical attacks occurred. Four months later, an epileptic seizure of several hours' duration took place, followed in the succeeding four days by four lesser seizures. Several days later, the paroxysms assumed a characteristic type, which they retained thenceforth. The attack began with tremor in the right foot, succeeded by clonic spasm in the right leg, tonic contraction of the right arm, and finally feebler contractions on the left side, and was followed by hemiparesis of the right side. Hysterical attacks alternated with the attacks described. Ultimately aphasia frequently became associated with the hemiparesis. Mental and physical failure progressed and permanent monoplegia of the right leg developed. Nearly two years after the accident, trephining was performed, the dura mater opened, and by means of the faradic current the center for the right leg localized. From this region an area of cerebral tissue, about as large as a dime and about one-tenth of an inch thick, was removed. The pial veins in the arm-center were ligated, the wound packed with iodoform-gauze and at the end of two days sutured and drained. The subsequent course was uninterruptedly favorable. After the operation, the right arm was paralyzed, the right leg to the knee paretic. Two weeks later, the palsy of the right arm suddenly disappeared. Nearly three months after the operation, an hysterical seizure occurred, induced by anger. Subsequently, however, there were no further indications of hysterical or epileptic attacks. Intelligence returned and mental occupation became possible. Slight motor weakness of the right arm, and a feeling of numbness at the right costal arch, the right knee and the ulnar side of the right ring-finger were the only abnormal clinical evidences that finally remained.

A Bullet in the Skull for Forty-three Years.—SAXER (*Corresp.-Blatt f. Schweizer Aerzte*, September 15, 1891) reports the case of a soldier who, when twenty years old, was struck by a bullet in the region of the left mastoid process, the missile perforating the bone and remaining unextracted. The patient lived for forty-three years after the reception of the injury. For twenty years a sinus persisted, the wound suppurating moderately. The patient complained of pain and a sense of weight and boring in the head and noises in the ears; there were mental confusion, impairment of memory, and other psychical symptoms. At the autopsy the flattened bullet was found imprisoned between the dura mater and the bone, in the midst of an inflammatory hyperplasia, behind and below the pervious defect in the bone. There was a permanent depression at a corresponding point in the left occipital lobe.

Ossifying Myositis.—MACDONALD (*British Medical Journal*, August 29, 1891) reports the case of a girl, four years old, in whom at two years of age hard nodules developed in numerous muscles of the head, neck, upper extremities, and trunk, occasioning rigidity and interfering with the movements of the affected parts. No hereditary factors could be elicited. Treatment was of no avail. Portions of the indurated parts removed were constituted of bone, having fibrous attachments of origin and insertion.

Kerauno-Neuroses.—FRANKL-HOCHWART (*Zeitschr. f. klin. Medicin*, Bd. xix, H. 5 u. 6, 1891) describes as kerauno-neurosis a condition that develops in persons who have been struck by lighting. The symptoms are those characteristic of the traumatic neuroses, and include palsies, tremor, derangement of common and of special sensation, limitation of the visual fields, ataxia, and exaggerated reflexes.

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A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 14, 1891.

IDIOSYNCRASY.

THE strange phenomena connected with idiosyncrasy serve but very dimly to light up the gloom of the chasms of our ignorance of physiological processes. We look with wonder into the depths and shudder that at last we know so little as to the ultimate constitution of protoplasm, the nature of nutrition, and the *modus operandi* of toxic substances. The writer knows a family of which the female members for several generations have been unable to eat strawberries without genuine and decided symptoms of poisoning ensuing. The male members of the family eat them as others do, but a single berry given by a disobedient nurse in a few hours killed a little daughter of two years. DEJEAN says that the celebrated HACHU was thrown into convulsions whenever he dared to eat strawberries.

Probably the most remarkable case of idiosyncrasy on record is that of DAVID WALLER, described in detail by DR. OVERTON in the *Southern Journal of the Medical and Physical Sciences*, vol. iii., 1855. In all other respects than that to be described, Waller was a healthy, normal man, born of healthy parents. Seven brothers and sisters were free from his idiosyncrasy, and his own seven children were also free from it. But to this poor man life became almost unendurable because for him wheat flour was poison. Unbelieving friends would deceive him, and put a pinch of flour into his food. Trusting them, he would eat, but the violent toxic symptoms never failed to follow. DR. OVERTON thus describes the peculiarity:

"If he eat flour in any form, or however combined, in the smallest quantity, it produces in two minutes or less, painful itching over the whole body, followed soon by severe colic and tormina in the bowels, great sickness of the stomach, and continued vomiting, which is ten times more distressing than that produced by tartar emetic—the itching is more greatly increased in violence, and especially of the head, face, and eyes, but tormenting all parts of the body, and not to be even appeased by any degree of scratching, or any other means ever used for the purpose; the eyes also burn painfully, turn very red, and discharge much water. And these latter symptoms occur usually in about ten minutes after eating the wheat flour, no matter how prepared—the sickness of the stomach preceding the other symptoms.

"The above symptoms continue for two days with intolerable violence, causing great torment, and begin only to decline in severity on the third day after the attack; and usually cease after ten days' continuance. As the foregoing symptoms begin to decline in violence, the effect of the poison appears to seize upon the lungs, causing much and distressing cough, soreness, and making the lungs feel rough from coughing, causing a feeling of suffocation, and the expectoration of a great quantity of phlegm. Toward the end of the attack the symptoms are like those of a person laboring under consumption, and have often caused him alarm, and to fear that they would terminate in that disease. The attack produces great weakness, confines him to his room, and most of the time to his bed, in which he is often obliged to be propped up to aid his breathing, which is difficult and laborious, like a person afflicted with asthma. Except during the few first days of an attack, the appetite is not greatly impaired.

"The smell of wheat flour produces all the above symptoms in a minor degree, except sickness at the stomach, vomiting, and pains and tormina of the bowels. It is for this reason that he cannot go into a mill, or house, where the smallest quantity of wheat flour is kept, without suffering; the smallest amount, if loose, is sure to be smelt, and, if not immediately escaped from, to produce upon him the painful effects before stated.

"This has been his condition from the time of his earliest recollection, and his mother has told him that when an infant at the breast, he had been laid out as dead, caused by feeding him with pap that was thickened with wheat flour."

MR. WALLER'S own explanation of this strange fact was that during gestation the family having no flour the mother's longing for wheat bread was intense, and when it was obtained and eaten it made her violently sick, and caused her to loathe such bread for some time afterward.

Shell-fish—crabs, lobsters, clams, mussels—pro-

duce cholera-morbus in a certain proportion of persons. DR. HYDE SALTER (*Edinburgh Medical Journal*, May, 1859) describes two cases in which a few grains of rice or rice-flour, however surreptitiously introduced into the food, speedily produced the greatest distress with asthmatic symptoms. Instances are on record in which figs have caused illness; eggs, swelling of the tongue and throat, and alarming sickness; veal, a nettle-rash; and it is well known that to many persons honey is almost or quite poisonous. Meat of any kind will in some persons produce violent pain, nausea, and vomiting. Vinegar will in certain patients cause cholera-morbus, and in others salad-oil will result in a cutaneous eruption all over the body. There seems to be no article of food that in certain individuals will not produce toxic symptoms, whenever eaten—even milk being a powerful gastro-intestinal irritant to some children.

There is even a greater chronicling of illogical and anomalous facts as regards drugs. One person will be mercurialized by a grain of blue mass, while another will take ten grains every day for a week without symptoms. One-thirtieth of a grain of morphine will sometimes produce decided physiological effects in some patients: in one acting as a hypnotic, in another as a stimulant. Five grains of potassium iodide have been sufficient to bring a patient to death's door. Toxic symptoms have been caused by $\frac{1}{400}$ of a grain of conine hydrobromate. A case was reported last year (*Amer. Journ. Med. Sci.*) in which enormous swelling of the tongue followed small doses of antipyrin. HARGENS had a patient who was repeatedly salivated by small doses of opium; WERNER reports a patient in whom violent emesis always followed the administration of the drug, and in GAUBIUS'S patient it produced a general desquamation of the epidermis.

If one seek for a satisfying explanation of the phenomena of idiosyncrasy in the books, he will seek in vain.

We begin to catch glimpses of reasons in the different reactions of various orders of animals to specific substances. Hogs are very resistant to snake-poison, graminivorous animals have a remarkable indifference to atropine, etc. In the facts of immunity, however, we get a deeper insight into the mystery, and in the selective action of different drugs upon special tissues of the body we seem to be yet nearer the truth.

It doubtless seems to have no logical connection with the foregoing to mention the simple but patent fact that every person exhales an odor different from that of every other person in the world. A dog, by smelling, can tell his master's footstep from that of every other person. Thus it follows that the atomic and molecular constitution of the general protoplasmic molecule is different for every individual. The selective action of drugs upon the various organs of the body proves the further differentiation of protoplasm in these different organs. The ultimate molecule of nerve-cells, of nucleoplasm or bioplasm, is the most complex of substances, formed of the greatest number of constituent atoms, and necessarily in a condition of the most unstable equilibrium. A touch or jar breaks off loosely-held component parts, and at the approach of a foreign intruder it readily yields them up, as they are caught in the more powerful sweep of the stronger vibration. It is upon this combined complexity and instability that depends the entire function of the release of energy, the conversion of molecular into mechanic force. The peculiar constitution of the protoplasmic molecule, ever varying and continuously changing, depends for the individual and for the organ upon the individual history and the special nutritional habit, inherited or acquired, and in each one it must therefore react in a different way to the same influence. Every molecule is an enormously complex system of systems of multiform subordinate vibrating atoms held loosely by the carbon sun to a common center. Powerfully modified in structure by a peculiar habit or experience, the molecule resists change by a neighboring alien or toxic system that would steal its peripheral comets or Neptunes. We thus catch a hint of the explanation of the fact of immunity. Or, again, by denial of accustomed nutrition the molecule may become so abnormally modified and permanently self-compensatory that the simplest nutriment may disrupt the delicate bonds, and what was once the best of foods become now the most potent of poisons.

PULMONARY TUBERCULOSIS AND MALARIAL FEVER.

THERE is probably no mistake in clinical medicine so common as that of confounding pulmonary tuberculosis and malarial fever. The latter is not often mistaken for the former. Though no harm might result, the error would still be a culpable one. But careless observation and criminal want of physical investigation have unfortunately in too many cases led to a diagnosis of malarial fever when a grave

disease of the lung existed. In such a case the error would be a fatal one, especially in view of the relative success with which, in judicious hands, cases of incipient tuberculosis are treated. "Malaria" has been made to serve as a diagnosis in many an obscure and anomalous febrile condition, but in no single one more disastrously than in pulmonary tuberculosis.

There is a period in the history of tuberculosis of the lungs when there may be reasonable diagnostic doubt, but a little patient waiting, with *careful observation, thorough physical exploration*, judicious therapeutics, and above all *examination of the blood and of the sputum*, in accordance with modern scientific methods, will set all doubts at rest. There can be no excuse for error, if any of these means of diagnosis are neglected.

The greatest difficulty, however, is encountered in cases in which, on repeated investigation, neither the evidences of tuberculous disease of the lungs are to be detected in the sputum nor the evidences of malarial disease are to be detected in the blood. In such cases importance is to be attached to the family history, to the hygienic surroundings, to the symptoms, and to the course of the disease, and, finally, to the results of treatment. Negative evidence can never be so valuable as positive evidence. Then there are other cases in which malarial infection is only too evident, but in which observation and examination would disclose the simultaneous existence of tuberculosis of the lungs. In the light of increased knowledge we can no longer maintain that malarial disease and tuberculous disease cannot coëxist.

The lesson to be derived from all this is, that the practitioner dare never, in any case, permit the possibilities of combination to escape him. In all obscure cases every line of investigation must be pursued to its ultimate refinements, and not an organ or system should escape the closest scrutiny. The medicine of the future must be alert, anticipating disease, preventing its development when possible, and stamping it out in its incipiency.

THE KEELEY CURE.

People seem never to tire of chicanery and humbug. Mystery and quackery naturally go hand in hand, and the remarkable, almost inexplainable love of humanity for the adept professors of these twin arts will always furnish a plentiful supply of dupes. So great is the curse of drunkenness that if by the humbuggery of secrecy, delusion, and hypnotic suggestion, any considerable proportion of drunkards could be reformed, it would almost appear inexcusable to make light of the chicanery, and the expert trickster might pocket his million in undisturbed peace. But a knowledge of Nature's laws and of the facts of physiology leads one to recognize that revulsion and evil finally result from trifling with moral or physical facts. It is in the long run better to cure rightly and really than wrongly and delusively. The doing of evil that good may come is pathologically and therapeutically prone to be resultless of good.

Concerning the so-called bichloride-of-gold treatment of drunkenness, it may be suggested that bichloride of gold does not exist in stable solution. Our modern Cagliostro should know that the compounds of chlorine and gold are either the monochloride or the trichloride. He should, therefore, devise a new chemistry, or adopt a proper nomenclature.

There can be no discussion of the heinousness of the crime of advertising the possession of a remedy for drunkenness, and at the same time keeping the nature of the preparation or treatment a secret. If ever the use of thumb-screws and rack were justifiable they should be applied to the wretch that for purposes of gain would keep from humanity the knowledge of such a cure.

The medical profession, so far as its self-respecting members are concerned, has set its face rigidly against secret nostrums, and despite all the cry of bigotry and prejudice that may be raised by the unthinking mob of magic-mongers, there will be no compromise upon the question while there remain in the profession honor, love of fellow-men, and hatred of disease.

SOCIETY PROCEEDINGS.

NEW YORK STATE MEDICAL ASSOCIATION.

Eighth Annual Meeting, held in New York City, October 28, 29, and 30, 1891.

(Continued from p. 555.)

Second Day—October 29th.

Dr. F. M. Warner, of New York County, read a paper entitled "Notes on the Treatment of Tuberculosis." Speaking of heredity, he said that the weight of authority was with those who believed that tuberculosis in very young infants was acquired by the ingestion of milk or other substance infected with tubercle-bacilli. What was inherited was a suitable soil for the development of the bacilli. Referring to prophylaxis,

he spoke particularly of the danger to the public health from lack of attention to the proper cleansing and disinfection of railroad cars. He detailed the histories of nine cases that he had treated with Koch's tuberculin, most of which showed decided improvement, two being apparently cured. The antiseptic treatment of pulmonary tuberculosis by inhalations of creasote and terebene, and the internal administration of creasote, had resulted in a marked diminution of cough, but had not arrested the progress of the disease.

DR. CHARLES W. BROWN, of Washington, D. C., read a paper on "Dislocation and Fracture of the Vertebræ," in which he expressed the view that in the treatment of these conditions the most important point is to immediately etherize the patient, and endeavor to reduce the dislocation by extension and manipulation, or by bending the spine across the knee as a fulcrum; and if these efforts proved ineffectual, to cut down upon the vertebra, effect the reduction, and remove any fragments of bone that were likely to become necrotic, or that were found to be pressing upon the cord. Careful studies, both clinical and pathological, showed that, after division of the cord, union is not likely to occur under any treatment. Of 123 recorded cases, 84 were cervical, 30 dorsal, 7 lumbar, and in 2 the location was not stated.

DR. DOUGLAS AYRES, of Montgomery County, read a paper entitled "Two Cases of Forward and Outward Dislocation of the Astragalus, with Mode of Reduction and Result," in which he expressed the view that it is not possible to formulate an exact course of procedure applicable to all cases of luxation of the astragalus, owing to various complications that may arise; but in the two cases reported, which were apparently typical, the prominent factors in bringing about the desired result were complete anesthesia, thus insuring perfect relaxation of the parts, and taking advantage of the best position to make extension and to graduate the force required.

DR. J. W. S. GOULEY, of New York County, exhibited a plaster cast that had been taken a few hours after the occurrence of a forward and outward dislocation of the astragalus. The cast showed well the prominence of the head of the astragalus upon the instep. Dr. Gouley also presented a patient who had received a similar injury a month previously. The case was admitted into the hospital a few hours after the accident, and an immediate attempt at reduction by means of manipulation with the hands was made, carefully avoiding the use of very much force. By flexion, extension, and a little rotation, a few minutes of such manipulation sufficed to effect the reduction. The leg was then enveloped in cotton and a snug bandage and an outer wooden-splint were applied. At the end of a week a gypsum bandage was applied, and after eighteen days this was removed and the patient allowed to walk around. The application of excessive traction by means of pulleys or other similar apparatus, is much more likely to do harm than good. The great point is to effect the reduction within a few hours after the injury, and to do this without the employment of much force.

DR. E. M. MOORE, of Genesee County, emphasized the inadvisability of employing much force in the attempts at reduction. He pointed out the importance of placing the splint at right angles.

DR. HOMER O. JEWETT, of Cortland County, exhibited some rat-tailed larvæ that had been voided from the human intestine in two different cases, together with carefully prepared histories.

DR. A. L. CARROLL stated that, with the aid of another entomologist, he had been able to determine that these larvæ belonged to one of two species of dipteræ—either meseron or eristalis. Their exact place could only be determined by examining the fully developed insects. Although several similar cases are on record, these are the best observed that have been reported. Very few physicians are aware of the comparative frequency with which these pseudo-parasites infest the human subject. It has been supposed that the larvæ are carried into the human stomach by drinking-water or uncooked vegetables, such as salad.

DR. S. T. CLARK, of Niagara County, presented a case of rupture of the diaphragm at the antero-posterior angle of the esophageal orifice, with consequent laceration of the branch of the phrenic artery that passes through the diaphragm at the corresponding point, and disturbance of the accompanying phrenic nerve. While lifting a heavy weight the patient was seized with a sharp, transient pain, referred to the extremity of the ensiform cartilage, and followed by nausea, pallor and great prostration. A small clot of blood was probably formed at this time, which accounted for the temporary amelioration in the symptoms. Two hours later, when the stomach was fully distended with food and the conical portion of the esophagus was distended by the disengaged gases, the lacerated surfaces were more fully separated, permitting a recurrence of the hemorrhage, with a corresponding augmentation of the pallor and nausea, to which diaphoresis was added. Shortly after, under similar circumstances, the same symptoms appeared with increased severity. On the following day the accumulated clots filled the anterior portion of the middle mediastinum, and crowded the heart an inch and a half to the left. A week later the clots had so far become absorbed as to permit the heart to resume its normal position and action. A slight pericardial friction-sound was heard at one time; this was interpreted as indicating that there was a partial organization of the clot at the apex, with the formation of adhesions at that point.

In the discussion on alienism, the subject of the causation of insanity was taken up by DR. JUDSON B. ANDREWS, of Erie County, in a paper on "Heredity and Environment." He expressed the view that the drift of thought tended to make heredity a *direct* and *exciting*, rather than a predisposing cause. To do this is to make life the result of an irresistible fate. It has been calculated that in the United States, in a population of one hundred thousand, there are two hundred insane people, of whom fifty would have an insane ancestry. There is a great tendency to exaggerate the force of heredity. Heredity alone does not produce insanity; its influence is to be found in a greater liability in the individual to become insane under some exciting cause existing in the environment. Dr. Andrews strenuously opposed the view that because insanity has existed in the family of a patient, there is little or no hope for the recovery of that patient. Those of insane ancestry may be confidently assured that there is no fatality about heredity, as it can only become a factor in the

production of insanity under conditions favoring the development of insanity, and these conditions are such as result in deterioration of the general health, and particularly of the vigor and integrity of the nervous system. These influences depend upon environment and not upon heredity. Environment, therefore, may be potent to intensify or to antagonize heredity. While heredity is most powerful at the adolescent period of life, there is also at this time the greatest mobility and the readiest control, as the environment is largely a matter of choice. In mature life there is much more danger of the development of insanity, but then there is an opportunity for the individual to so live as to overcome the hereditary influence.

Dr. H. M. Hurd, of Maryland, considered the relations of traumatism and shock to insanity. The far-reaching character of heat-stroke as a cause of insanity could not, in his opinion, be over-estimated. Cases of insanity following heat-stroke display the same suspiciousness and apprehension as those in which the insanity is due to traumatism. Shock sometimes produces an instability, rendering the patient emotional and lacking in will-power. Such cases yield the richest harvest to the hypnotist and mind-curer. Injuries to the head during childhood often lessen the brain-resistance and render the subjects liable to the development of mental disease at the physiological epochs of life, particularly at puberty. The most characteristic feature of traumatic insanity is constituted by delusions of suspicion and apprehension, and sometimes a tendency to vice and crime. With few exceptions the prognosis is bad.

Dr. P. M. Wise, of St. Lawrence County, discussed the relation of bodily diseases and senility to insanity. He quoted statistics to show that bodily diseases contribute from 12 to 14 per cent. of the cases of insanity in both sexes. Pregnancy and the puerperal state contribute 9 or 10 per cent. of the cases in females. Post-febrile insanities now form a smaller proportion than formerly, owing to the abandonment of depletive treatment. When the insane-diathesis exists, the patient requires extreme care during convalescence, to prevent the development of an incurable form of insanity. Heart-disease, on account of the attendant anemia, is often a direct physical cause of insanity, quite independently of other predisposing causes. The multiform traumatic causes furnish only a small etiological factor, and the same is true of sunstroke. For some years past, epidemic influenza has been assigned as a cause of melancholia; the great mental depression frequently accompanying influenza almost stamps it an epidemic nervous disease. It has probably been potent as a cause of insanity and of shattered nervous systems. The popular belief that diseases of the sexual organs bear a close relation to insanity is not well founded. Dr. Wise held that there is no uterine psychology; in a somewhat extensive experience with gynecologists in insane-hospitals, he had never seen a recovery from insanity even remotely due to gynecological treatment; he believed that in a few cases such treatment had actually interfered with recovery. The physiological epochs of life—pubescence, adolescence, and the climacteric—present fruitful periods for the unbalancing or unstable brains. Much might be said about the importance of harmony of development of the body and mind during the period of pubescence. The child-bearing processes act as frequent exciting causes in women, most often after the puerperium, and next in frequency during lactation. It is rare, however, for insanity to occur under these circumstances, without some preëxisting constitutional tendency, either inherited or acquired by a life of poverty and overwork. Protracted lactation in neurotic women is a perilous proceeding, and may result in life-long mental alienation. From a psychological standpoint there is a normal pathology of old age. Dr. Wise deprecated the growing tendency to certify as insane cases presenting this so-called normal pathology.

Dr. G. Alder Blumer, of Oneida County, took up the relation of syphilis and intemperance to insanity. He quoted statistics from various countries to show that, with the exception of France, the percentage of cases of general paresis in which syphilis exists as an antecedent condition is from 60 to 80. In regard to the proportion of forms of insanity other than general paresis due to syphilis, the statistics of the Utica Asylum show that the proportion of syphilitics to the total number admitted is 52 per cent.

Those having much experience with the insane will not deny that one of the most common causes of insanity is alcoholic excess. It seems probable that confirmed drunkenness of the parent is as potent as actual mental disease or mental deficiency to predispose to the development of insanity in the children; in fact, drunkenness is a transient insanity. Intemperance is often assigned as a cause, when in reality it is only a premonitory symptom. When directly the result of alcoholic intemperance, insanity is generally associated with systematized delusions and hallucinations of a persecutory character; this is not apt to be the case when insanity is a symptom of intemperance. Alcohol first excites, then paralyzes in succession every nervous center in the body.

Dr. E. N. Brush, of Maryland, confined his remarks to a consideration of arrest of development and diseases of infancy as factors in the causation of insanity.

Dr. W. D. Granger, of Westchester County, discussed "Causes of Insanity Peculiar to Women."

Dr. Charles Stedman Bull, of New York County, read an exhaustive paper on "Tumors of the Orbit and Neighboring Cavities.

Third Day—October 30th.

Dr. Henry D. Didama, of Onondaga County, read a paper entitled "Mental Therapeutics," in which he considered many of the cures that have been popular at various times, and deduced from them certain useful lessons.

Dr. Marcy, of Boston, and Dr. Fell, of Erie County, entered an earnest plea for better popular instruction on medical topics, a duty devolving upon each individual member of the medical profession. Dr. Fell spoke particularly of the frauds constantly being practised upon the community by irregular and unscrupulous physicians.

Dr. A. Palmer Dudley, of New York County, delivered the "Address in Gynecology." After reviewing the advances recently made in this department, he discussed the treatment of fecal fistula following laparotomy. Prophylaxis was of the greatest importance, most cases being preventable by careful and deliberate methods of

operating. Absolute rest in bed was requisite for the successful treatment of such a fistula, together with a diet that produced a minimum quantity of gas. Closure from the bottom could be promoted by passing daily through the fistula a piece of marine lint, soaked with balsam of Peru. Should the usual methods fail, a secondary laparotomy must be resorted to.

DR. GEORGE E. FELL, of Erie County, related a case of puerperal eclampsia associated with the uric-acid diathesis, and raised the question, What had this diathesis to do with the eclampsia? He cited some experiments demonstrating that in animals an excess of uric acid in the blood might give rise to convulsions. He also cited the case of a woman, who in the early months of pregnancy failed rapidly in health, coincidentally with the appearance of symptoms of the uric-acid diathesis, but who was rapidly restored to health by alkaline treatment, associated with daily irrigation of the bladder.

DR. FELL also reported "A Case of Embolism of the Pulmonary Artery Successfully Treated by the Persistent Use of Oxygen Inhalations." At the time the patient was first seen by Dr. Fell she was in a critical state and thought to be dying. The dyspnea, which was most distressing, was instantly relieved by the first inhalation of oxygen, and every attempt to discontinue these inhalations was followed by a return of the dyspnea and cyanosis. It was found necessary to use the oxygen continuously for four days, the total quantity used being nearly 1200 gallons. The object of the treatment was to keep up respiration and oxygenation for a time, in the hope that the embolism would be absorbed, and the obstruction thus removed. This occurred, and the patient eventually recovered.

DR. WILLIAM D. GARLOCK, of Herkimer County, read a paper on "Typhoid Fever in Children," in which he said that the most prominent symptom is the febrile movement, which begins earlier and rises more rapidly to the acme in children than in adults. The evening temperature is usually from 103° to 104.5°, and the ascending curve is not so regular as in a typical case in the adult. The whole duration of the fever is also shorter: of 80 cases, 7 lasted less than ten days; 30 from ten to fifteen days, and only 12 cases lasted the usual twenty-eight days. In children, the proliferation in Peyer's patches is more superficial than in the adult, and the proliferated cells undergo fatty degeneration and are absorbed without the formation of ulcers. In adults, the fever is partly due to the germs and the typhoid toxine and partly—*i. e.*, after about fifteen days—to the absorption of septic matter at the surface of the intestinal ulcers. As it is rare for children with typhoid fever to have ulcers of the intestine, they usually escape the period of secondary fever—hence, the shorter duration. The abdominal symptoms are usually not very well marked in children, but owing to the fact that the intestines of children are very easily irritated, the diarrhea is often more troublesome than one would suspect from the abdominal tenderness and tympanites.

DR. JOSEPH D. BRYANT, of New York County, considered the "Operative Treatment of Carcinoma of the Breast."

The requirements for successful operative treatment are (1) a prompt recognition of the growth by the patient herself; this can only be accomplished by individual effort on the part of medical men to impress upon the laity the importance of immediately attending to all growths about the breast, no matter how apparently insignificant, and by explaining the prospects of success, if this condition be complied with; (2) a prompt consultation with a careful and competent physician; (3) immediate, wide, and thorough excision of the growth and of all the tissues having functional connection with the gland. The incision should not be less than two inches from the apparent borders of the growth, and the operator should not concern himself about the amount of tissue removed, for if there be not enough left to form flaps and completely close the wound the granulating area can be quickly made to heal by skin-grafting.

DR. E. D. FERGUSON, of Rensselaer County, read an interesting paper on "Congenital Imperforate Rectum," and described the methods of treatment best adapted to the varying conditions.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Nineteenth Annual Meeting, held at Kansas City, Missouri, October 20, 21, 22, and 23, 1891.

FIRST DAY—OCTOBER 20TH.

DR. C. D. MCDONALD, of Kansas City, read a paper on "The Cause and Prevention of Infant Mortality," giving statistics showing that the mortality of infants soon after birth was 20 per cent., of which one of the principal causes was exposure to a low temperature. Inducing sleep by means of soothing syrups is another evil. Still another is the forcing of improper food, such as crackers, and water and whiskey into the stomach of the newly born.

Statistics show that in the first year of life the mortality among infants fed upon artificial food is 50 per cent.; with the employment of natural food, the mortality is but 10 per cent. The best artificial food is pure cow's milk. Sterilization by chemical processes is not thoroughly successful, because vital principles cannot be supplied by chemical processes, but sterilization is preferable to impure milk.

Starchy substances cannot be digested by the infant's stomach. By the chemical processes of the stomach, they are first converted into sugar, then alcohol, and then acetic acid. Improper dressing—thin clothes—is also a prolific source of disease among infants.

PROF. W. W. DANIELLS, of Madison, Wisconsin, expressed the view that no one should be allowed to sell milk in cities unless he put his dairy establishment under the control of the sanitary authorities.

DR. JOSEPH SHARP, of Kansas City, Missouri, read a paper on "Glanders in Man," in which he presented the report of a case. He recommended that to prevent glanders, those who came in contact with horses having open sores or discharges from the nose should disinfect the hands with a solution containing a tablespoonful of equal parts of glycerin and carbolic acid in a quart of hot water, or ten grains of corrosive sublimate in a quart of water.

DR. PAUL PAQUIN, of Battle Creek, Michigan, reported a collection of seventeen cases of glanders in man. He related the case of a man who, driving behind an affected

horse, was struck in the eye by a spray from the beast's nostrils, as a result of which glanders rapidly developed and terminated fatally.

CHIEF JUSTICE HORTON, of Kansas, read a paper on "The Necessity for More Stringent Legislation to Repress Empiricism," in which he recommended that, for the protection of the public, the American Public Health Association should recommend the enactment of statutes excluding from the medical profession those who are not competent by learning, skill, and experience to practise, and punishing by imprisonment any who violate the provisions. No one should be permitted to practise medicine or engage in surgery unless authorized to do so by a competent board of Government or State examiners.

MR. ALLEN HAZEN, of Lawrence, Mass., read a paper on "Water-supply and Public Health," in which he maintained that as the germs of typhoid fever and of cholera gain entrance into the system with food and drink, pure water is a necessity. If water is absolutely free from sewage, it can be depended on as being comparatively pure, although many waters not polluted by sewage have been known to breed disease. Flowing streams will partially purify themselves. Water will not always become purified in reservoirs and long channels. Some system of filtration is therefore imperative, and the question to be decided is as to the best system of filtration.

DR. HENRY B. HORLBECK, of Charleston, S. C., presented some vital statistics from the Southern States, showing the death-rate among the colored population to be much greater than among the whites.

DR. FREDERICK MONTIZAMBERT, of Quebec, delivered the President's Address. He stated that the objects of the meeting were to quicken interest in the more purely preventive work of the profession, to increase interest in the organization and working of the coast quarantines and health-boards, in the sewage of cities, the disposal of garbage and refuse, the purity of water-supply, the infectious diseases of animals now known to be closely related to those of man, as well as other much broader questions of modern sanitation.

SECOND DAY—October 21ST.

DR. PAUL PAQUIN, of Battle Creek, Michigan, read a paper on "Vaccine and Vaccination," in which he dwelt upon the necessity for employing absolutely pure vaccine.

DR. YESI, of Mexico, spoke of the compulsory vaccination of Mexico. Only human vaccine is used. Vaccine from the lower animals is not cultivated. Better results are obtained from human than from animal vaccine. A serious smallpox epidemic has not visited that country in about twenty-five years.

DR. L. F. SOLOMON, of New Orleans, La., stated that in Louisiana each child must show a vaccination certificate before being allowed to attend school. About 90 per cent. of the primary vaccinations were successful. He favored the use of bovine virus.

DR. DELOS FALL, of Albion, Michigan, read a paper on "The Disposal of Garbage and Refuse," in which he discussed the intimate relation between typhoid fever and the accumulation of waste organic matter.

DR. EDWARD CLARK, of Buffalo, New York, made a report on the collection and transportation of garbage and refuse in cities. He advised full police power for the sanitary service of large cities. A galvanized iron tank holding about two or three bushels is the best receptacle for holding household garbage. The refuse tank must not be placed on the street or sidewalk, but the collector should be compelled to go to it, remove the contents, and replace the cover. For transporting garbage, carts are preferable for short, and wagons for long, hauls. The beds should be made water-tight and should be flushed after each dumping. The bed should be covered with iron.

DR. J. J. KINYOUN, of the U. S. Marine-Hospital Corps, read a paper on "Rabies," in which he said that the disease is transmitted almost wholly by the canine and feline species. It prevails all over the world, except in Australia, where it is not known. He opposed the idea that the disease occurs only in warm weather; statistics show that the greater number of cases occur in December and May. Recognition of the disease is not easy in any animal in the early stages. Dr. Kinyoun advocated the establishment and enforcement of strict quarantine regulations in order to eradicate the disease.

DR. P. C. REMONDINO, of San Diego, Cal., read a paper on "American Climates and their Physical Effects," in which he said that European immigrants soon lose their ruddy cheeks and bright eyes, with a certain loss of spirit, when they come to this country, because they lived in disregard of all hygiene or science. In changing climate they followed no rational rules for the necessary change of diet.

In a paper on "Animal Diseases" MR. ERNEST L. DUNDAS, of Kansas City, recommended police supervision of all milk dairies. He stated that the Jersey cow is the most generally afflicted with tuberculosis.

DR. PETER BRYCE, of Toronto, stated that in Canada milch cows were never bred, and in one city they are never used after they have once been dry, but are immediately sent to the butcher. It seemed to him that in view of the fact that there are 15,000,000 cows daily supplying the country with milk, and that in certain abattoirs from 5 to 10 per cent. of the cattle killed are tuberculous, there should be a most rigid and regular inspection of all milch cows.

DR. DOMINGO ORVANANOS, of the City of Mexico, presented a paper entitled "New Organization of the Supreme Board of Health of Mexico," in which he outlined the work of the Mexican Supreme Board of Health, of which one exceedingly good feature is the sending of a surgeon-physician with every ship leaving Mexican ports, who shall be held responsible for the sanitary condition of the vessel, and who shall be obliged to report to the Mexican consul at every port where the vessel may touch, and obtain from him a clean bill of health.

DR. GEORGE HOMAN, of St. Louis, Mo., read a paper on "Land Habitation as a Public Health Measure," in which he endeavored to demonstrate the benefits that would arise by the individual ownership of homes, as that would render less likely the dissemination of any communicable disease, and would render easier the measures to be taken against disease by permitting isolation, a most desirable feature in combating contagious disease.

Third Day—October 22d.

Dr. Peter H. Bryce, of Toronto, read a paper entitled "The Present Position of the Milk-supply Problem from the Public Health Standpoint, and Some Practical Methods for Securing Safe Public Supplies," in which he briefly summed up the precautions necessary to secure healthy milk:

1. It is especially desirable that a system of periodic veterinary inspection be exercised, in addition to the dairyman's inspection.

2. Careful supervision should be exercised as to the nature and quality of food for cows. All decomposed foods, such as those that are liable to undergo fermentation, should be wholly avoided. The best foods are well-ripened grains and grasses.

3. The stables for cows are too often dark, damp, ill-ventilated and crowded pens. It is quite possible to keep a dairy stable, even on a large scale, free from the ordinary disagreeable stable odors. The water-supply of the cows is of equal importance.

4. The care of the milk at the time of taking and subsequently is of all points the most difficult and the most necessary to a supply of wholesome milk. This means almost a revolution amongst farmers and dairymen. The sterilizing of all cans and bottles by steam or dry heat and the boiling of all strainers will be necessary.

5. The delivery of milk is of prime importance.

6. When milk has reached the consumer it must be placed in a refrigerator or be promptly consumed.

Fourth Day—October 23d.

Prof. W. W. Daniells, Chairman, of Madison, Wis., read the Report of the Committee on Car Sanitation, in which it was shown that the great difficulty in the heating arrangement of cars was that all systems devised for the purpose provide for heat alone, and not for ventilation.

At the conclusion of the meeting a resolution was passed that in 1893 the Association should hold its meeting in Chicago, and that, so far as possible, the occasion be made an international congress of hygiene and public health.

The following officers were elected for the ensuing year: *President*, Dr. Felix Formento, of New Orleans, La. *Vice-Presidents*, Dr. Walter Wyman, of Washington, D. C., and Dr. Domingo Orvananos, of Mexico. *Secretary*, Dr. Irving A. Watson, of Concord, N. H.

The next meeting is to be held at the City of Mexico, at a time to be fixed by the officers of the Association.

CORRESPONDENCE.

NEW YORK.

The Filthy Streets—The Disposition of Stable-Refuse—Operating Theater of the Roosevelt Hospital—Case of Extreme Deformity—New Method of Staining Bacilli—Hydrophobia or Lyssophobia.

In my last letter I had occasion to speak of the filthy condition of our streets, and its effect upon the public health. It was not a new story to those who had resided in our misgoverned city, but it seemed at that time as if even our long-suffering citizens had nearly reached the limit of their patience. Since that letter was written, the Mayor, in tardy response to the public outcry, has removed the utterly incompetent street-cleaning commissioner, and has appointed a much more energetic and business-like man in his place. How much the Mayor was influenced by the action of the Academy of Medicine, I cannot say, but it is encouraging to note that this body of medical men felt called upon to direct special attention to the unsanitary condition of the city, and to emphasize the importance of the labors of the advisory committee which the Mayor appointed to inquire into this subject. In the discussion in the Academy on the adoption of these resolutions, Dr. Abraham Jacobi very pointedly remarked: "It seemed that instead of teaching the poor immigrants how to be clean, we learned from them how to be dirty, and it was particularly unfortunate that most of the dirt accumulated in those districts which are the most densely populated."

Another matter closely touching upon the subject of the public health, as well as upon the public comfort, concerns the disposition of stable-refuse, and although this may seem to be a rather odd subject to interest ladies, it has not escaped the vigilant eyes of the members of "The Ladies' Health Protective Association." This band of workers has taken up the cudgel in earnest against the stable-keepers who still persist in disposing of their stable-manure after the methods of their forefathers. This has long been a bone of contention with the sanitary authorities, and as long ago as 1866, when the Board of Health was organized, this was among the first and most difficult problems which confronted the Board. At that time, the greatest nuisance of this kind was at Forty-sixth Street and the East River, where large quantities of manure were dumped and allowed to remain all through the winter months, the heaps being frequently stirred up to prevent the manure from spoiling. While the health authorities have done much since then to abate such nuisances, there is still much to be done, and hence, the ladies of this Association, making common cause with the Section on Public Health of the Academy, set apart one evening for a joint discussion of the subject. Dr. F. R. Sturgis said that he had observed that very severe cases of diphtheria were particularly frequent in families living over stables. The large stables could easily and profitably make use of the baling machine, but in the establishments having only from two to ten horses there would be much difficulty in enforcing a rule requiring all manure to be baled, for the manure would have to accumulate for some time before it could be baled. If the health authorities would allow the small stables to put up the manure in barrels, then one of the greatest difficulties connected with this subject would at once disappear. But before the stablemen can be won over to our way of thinking, they very naturally insist upon knowing whether baling will lessen the commercial value of the manure. Experiments carried on by the chemist of the Board of Health have shown that the manure is not wet enough to lose any of its valuable properties by the process of baling, and that manure which has been kept in bale for thirty days has not deteriorated in the least. Major Bullard, the chief inspector of the Board of Health reported that under a

systematic weekly inspection, accumulations of stable-refuse upon the docks had been effectually prevented. There are upwards of sixty thousand horses in the city, and as 1100 loads of manure are removed daily, it does not seem probable that much is left in the city. These figures are founded on data gathered by the Board of Health. There is very little baling now going on, but about twenty-five per cent. of the stables are disposing of the manure in barrels. Dr. Alexander Hadden approved of the suggestions that had been made, but he thought we were not doing ourselves much credit by dumping the manure upon our neighbors, and on this account more stringent measures should be adopted, with the idea of preventing the unbaling of the manure until it reaches the consumer. It was resolved at this meeting to urge upon the Board of Health the enactment of a law making it unlawful after the first of October to transport manure in the built-up portion of the city, except in bales, or in properly covered receptacles. I have not been able to learn whether such a regulation is yet in force.

The handsome new operating theater of the Roosevelt Hospital is rapidly nearing completion. It is intended that it shall embody all the latest improvements of construction, as well as be supplied with the most approved of the many appliances used in modern surgery. To this end, Dr. Charles McBurney, who has entire charge of the arrangements of the building, spent some time in Europe last spring, gathering together the most recent ideas, in order that this magnificent contribution to surgical science may be made the most perfect of its kind in the world. I hope before long to be able to furnish a more detailed description of it.

A few days ago, Dr. Reginald H. Sayre exhibited before the orthopedic surgeons a case of extreme deformity from congenital lateral curvature of the spine. The patient, who is now fourteen years of age, presents a large V-shaped gap in the ribs on the right side of the thorax, through which the liver can be readily felt. The chest is of course very greatly distorted. the respiratory sounds are puerile, but the heart-sounds are normal. When she was first seen by Dr. Sayre, about one week before, her height was four feet six and three-quarters inches, but after being suspended in the spinal swing, there was a gain in height of five-eighths of an inch, and strange to say, this gain has been permanent. Dr. Sayre stated that he had met with several cases in which there was a permanent increase of stature as the result of this treatment.

A new method of rapidly staining bacilli in sections of tissues, which appears to possess some practical advantages, has been recently brought forward by Dr. J. M. Byron, of the Loomis Laboratory. The peculiar feature of the process is the way in which the sections are made to adhere firmly to the cover-glass. This is effected by immersing them in an albuminous fluid, and then coagulating the albumin. The sections, after being well rinsed with water, are put into a solution of equal parts of egg-albumin and a concentrated solution of boracic acid, the latter being added to preserve the albumin. When thoroughly soaked, they are transferred to a cover-glass, dried, and then immersed in a solution which will coagulate the albumin—*e. g.* absolute alcohol, equal parts of alcohol and ether, or better, a one per cent. solution of bichloride of mercury in absolute alcohol. After washing with water, they are stained by any of the ordinary methods.

The case of hydrophobia recently reported in the daily papers as occurring about a fortnight ago in Elizabeth, New Jersey, is one that may prove of more than usual interest to those here who are making a special study of this disease. A boy, eight years old, in the latter part of July was bitten by a dog, and was treated in the Elizabeth Hospital. The wound healed naturally, and the boy was kept in the hospital for some time, and seemed to be perfectly well. He was discharged from the hospital October 1st, and about a week later developed symptoms that the attending physicians thought were those of hydrophobia. I am told that the patient presented exaggerated reflexes, and when disturbed, suffered from spasms. His temperature ranged quite high—104° or more—and the symptoms, according to one observer, were more like those of a severe case of typhoid fever than of hydrophobia. My reason for saying that this case may prove more than usually instructive and interesting is that some observers incline strongly to the belief that most, if not all, the cases of so-called hydrophobia in the human being are really instances of lyssophobia, or a "dread of hydrophobia." Among those who advocate this doctrine is Dr. J. M. Byron, who, in a discussion upon hydrophobia at the last meeting of the Neurological Society, brought forward some of the grounds for his belief.

The five cases that he reported would have undoubtedly gone on record as instances of hydrophobia had they not been subjected to a searching investigation according to the methods pursued in our modern laboratories. The modern scientist it not content with calling a case hydrophobia simply because the hapless patient was at some time, more or less remote, bitten by a dog, nor is he satisfied with a plausible array of symptoms. He must have some of the patient's spinal marrow, and must inoculate a series of rabbits with this, and wait for a number of weeks to see if these animals develop rabies. Even this will not always suffice for our modern skeptic, who will not admit the case to be certainly one of rabies until this disease is produced in other rabbits inoculated with virus taken from the first series. It is after this fashion that Dr. Byron has weighed his cases in the balance, and has found them wanting. In one case, the post-mortem examination showed death to have been due to a hemorrhage at the base of the brain; in another, the negative results of laboratory experiments, together with the symptomatology, pointed to acute mania as the probable condition; in a third, death was due to an ascending paralysis, and the two remaining cases were examples of pure lyssophobia. The case in which death is ascribed to ascending paralysis is especially interesting, as it occurred in the person of a physician who assisted at an autopsy made upon one of the other cases. He received a slight wound at the autopsy, and shortly afterward developed symptoms that suggested to some the possibility of his having hydrophobia. He accordingly received the regular Pasteur treatment, but the course of the disease was in no way stayed, but rather seemed to become worse. The physician who performed the autopsy also wounded himself quite severely with a knife at the time he was en-

gaged in cutting that part of the body in which the virus of rabies is conceded to be the most virulent, viz., the spinal cord, yet he suffered no inconvenience from the wound, and has remained in perfect health. Some of those who saw the fatal case were of the opinion that death actually resulted from the antirabic inoculations, but the subsequent examinations did not confirm this view. If, as Dr. Byron seems to believe, nearly every reported case of hydrophobia is really one of lyssophobia, which may be roughly compared to a grave case of hysteria, it is pertinent to inquire how the boy in Elizabeth, who was too young to have any "dread of hydrophobia," and who had no idea that he was even dangerously ill, could be a victim of lyssophobia.

OBSTETRICS IN MEXICO.

To the Editor of THE MEDICAL NEWS,

SIR: The practice of this particular branch of medicine in this part of Mexico is not surrounded by all the conveniences that one of the progressive modern school might desire, which is a mild way of saying that the path of the practitioner is beset by all the difficulties and strewn with all the horrors that ignorance, superstition, squalor, and filth are continually opposing to the efforts of science. The Mexican law requires that the "parteras," or midwives, shall have a diploma showing that they have undergone a certain amount of instruction. The intention of the legislator was good, but it is as inefficient as other good intentions, which are said to make good paving material in a place which is hotter even than this place in the "rainy season." In this town of five thousand inhabitants, although there are a number of women who follow this avocation, there is not one who has fulfilled the requirements of the law. As might be expected, there is a great deal of bad obstetrics practised. The physician is called only to those cases that are complicated or become so through mismanagement. I give reports of a few cases to which I have been called.

November 1, 1891, at 5 A.M., I was summoned to see a young primipara, and found the following condition of affairs: The parturient female was squatting on the floor or ground in a small hut, and the midwife kneeling in front of her was engaged in making active compressive movements upon her abdomen. I made the woman assume the recumbent posture, and then loosened a cinch which was tied very tightly about her middle and which was almost cutting her in half. I always find this sinch tied very tightly about a woman, no matter what may be her trouble, perhaps from some superstitious belief in the merits of tight lacing, which is not confined to these parts. Upon inquiry, it became evident that the woman had been in labor about twenty hours; that at 1 A.M. a child had been born, and at that time the midwife discovered that the uterus contained another child. During the four hours that elapsed between the birth of the first child and my appearance upon the scene the midwife had been engaged in ineffectual efforts to expel the child by squeezing the abdomen. By palpation, I discovered the fundus of the uterus lying to the right side and the child in the transverse position. Vaginal examination revealed the fact that a hand and an arm were protruding. Although uterine contractions were fairly strong, of course the child could not be born.

I determined to do podalic version and terminate the labor as soon as possible. No assistance was obtainable whatever, except a few ignorant Mexican women and the father of the patient, and these objected to the procedure. Having silenced them by asking Why, then, have you sent for me? I administered chloroform and then introduced my right hand into the uterus, steadying that organ with my left. Passing the right hand to the fundus I was successful in grasping a foot and, bringing it down, quickly delivered a child which had the appearance of having been dead for some time. The placenta was delivered by the method of Credé, and a uterine douche of bichloride solution of 1:1500 was given. There were no bad results, no appreciable rise of temperature, and the woman wished to get up on the second day.

The second case occurred several days later and was that of a multipara, who was suffering from retained placenta. In a previous labor she also had the same trouble. My predecessor had performed the operation for extraction of the placenta without the use of an anesthetic. I gave chloroform and extracted the placenta with some difficulty, as it was firmly adherent. The after-treatment was the same as in the preceding case, and was followed with equally good results.

The third and last case which I cite was that of a primipara who had been in labor two days. Upon my arrival I found the woman squatting, holding with both hands to a rope attached to a beam in the roof, the midwife in front of her pressing upon the abdomen and with her other hand in the vagina trying to pull down the child. I made the woman lie upon the floor (there was no bed or table in the hut nor in procuring distance), and upon examination discovered that the head was in the L. O. A. position, but had not entered the pelvis on account of discrepancy in size. I administered chloroform and proceeded to do the high forceps operation. The operation was attended with considerable difficulty, as I was oblighed to sit upon the floor and work in that disadvantageous position. After pulling for thirty minutes I succeeded in extracting the head, there being in the meantime no uterine pains, as the uterus was exhausted. During the process of the operation the midwife, who was also the mother of the woman, became maudlin-drunk (she was moderately so when I commenced), and I was obliged to dispense with her services and relegate her to the outside. My assistants (?) were then limited to the husband of the parturient and two women, who held her while I pulled. I would pull them all four across the floor, and then we would take the patient back and commence over again. Finally, I discovered that progress was being made, and taking the forceps off, the child was delivered with the heart beating feebly, but it stopped, and all efforts to restore it to life were unavailing. The mother of the woman rallied sufficiently to keep the patient awake all night, giving as a reason her fear that if she went to sleep she would never wake up. There was a laceration of the perineal body and retention of the urine for about two days, but with these exceptions, the woman made a good recovery.

FRANCIS D. MERCHANT, M.D.
BATOPILAS, MEXICO.

SENDING INVALIDS AWAY FROM HOME.

To the Editor of THE MEDICAL NEWS,

SIR: After spending several winters wandering about the South in search of relief for certain bronchial troubles, I feel myself competent to make some remarks deserving consideration.

In the first place, I wish to record my indignant protest against the practice of sending incurables away from home. A large proportion of the invalids one meets in the South are the victims of cruelty or ignorance on the part of their medical advisers, who indiscriminately use a method of treatment that can be of advantage only in the first stages of disease. In most of the so-called "health resorts" there is no provision made for those that are seriously ill. The hotels and first-class boarding-houses do not want them, and the idea of a second-class boarding-house, crowded with these misguided creatures, is something awful to contemplate. I can bear witness, that in many instances death is hastened by the want of proper food and the home-sickness that comes from unpleasant surroundings; and the blame lies at the door of the doctors who pack their patients off, so far as they are concerned, literally to "parts unknown." Certainly, no conscientious physician, having a personal knowledge of these places, would send thither patients in the advanced stages of disease without first making sure that they will be placed under the most favorable circumstances. Without such provision, they will be almost sure to come back in their coffins, or die on the road in the struggle to get to homes they never should have left. If possible, a house should be taken for such persons, and they should be surrounded by their friends and the comforts to which they have been accustomed. For those that cannot afford this, any decent home in the vilest climate in the world is a better place than any "health resort" in the South with which I am acquainted.

Again, while there is no doubt in my mind that many persons in the incipient stages of phthisis, as well as those that are only delicate, are greatly benefited by escaping from the harsh northern winter, I am sure that much harm is done by making the change too great. The idea of a "vestibule train" that takes you from New York in a snow-storm, and lands you among the orange groves of Florida within twenty-four hours, is fascinating in the extreme; but the results are not good. In a normal season the transition is too sudden, and one finds the heat oppressive and debilitating. Great circumspection is required in making a change of clothing, because a drop from 80° to 40° is far more trying than one from 40° to zero, and such changes as the first and even still greater, are not uncommon, even among the orange groves.

For the benefit of the busy practitioner who has no time to look for himself, I venture to suggest that even his consumptive patients, properly selected, will show better results in the bracing air of such a place as Marietta in the highlands of northern Georgia; or at Aiken, still worthy of its old-time reputation; or, better still, among the sand hill pines of historic Camden, with its picturesque old mansions, and a well-sustained reputation for good living handed down from the luxurious old planters of the ante-bellum days of South Carolina.

Finally, bitter experience has taught me that no delicate person who has passed the winter in the South should trust himself in the treacherous climate of the regions about New York or Boston before July 1st.

J. H. ROGERS, M.D.

SAG HARBOR, L. I.

UNUSUAL MODE OF TRANSMISSION IN A CASE OF DERMATITIS VENENATA.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of October 24th I see the report of a case of unusual mode of transmission in a case of dermatitis venenata. I wish to report a parallel case. One of the severest cases of dermatitis I have seen occurred in a lady, Mrs. E., aged fifty-three. On July 21st, the patient, a near relative, asked me to give her something for "hives." She was given what was deemed necessary, and on the 24th, as she walked with difficulty and seemed to be suffering considerably, I ordered her to bed, and on inspecting the parts found buttocks and thighs edematous, very red and hot, and covered with small vesicles, which were not easily ruptured. She complained of intense burning and itching. Having had wheals that itched in conjunction with mosquito-bites, and having scratched herself quite severely, I looked on the case as one of eczema, the result of the scratching—an artificial eczema. Zinc and calamine lotion, carbolic acid spray and other applications seemed not to relieve her. She remarked that her trouble reminded her very forcibly of ivy-poisoning, which she had once had. As she had not been exposed, so far as we could ascertain, the idea was not long entertained. She suffered excessively, and the next day I asked Dr. J. B. Keber, Professor of Dermatology at the Beaumont Hospital Medical College, to see her with me. He pronounced it a case of dermatitis venenata. Where contracted?

The patient remembered that her husband had been to the country on two occasions just a few days before she became affected, and that he had had a slight skin eruption, reddish in color, with a few "small blisters" that itched, on his forehead, cheek, and wrists. It was so slight as to be hardly noticeable. She herself had applied a soothing lotion to the affected regions, using her hands to mop it on, at the same time or shortly after scratching a mosquito bite on her right knee. The next day she noticed the wheals, which led her to make a diagnosis of hives; and things rapidly went from bad to worse. The husband was examined, and desquamation was in progress on his wrists and forehead. Here, then, the husband carries the poison, having a very slight eruption, and the wife infects herself and suffers in a very distressing manner.

Grindelia robusta gave her no relief; powdered aristol, a mention of which was seen in THE MEDICAL NEWS, was given a trial, and proved of no value. Sulphate of zinc, as a lotion, and carbolic acid with oil of peppermint, in the shape of a spray, gave the most relief. Fully two weeks elapsed before the patient was able to be about again with any degree of comfort.

W. L. BLICKHAHN, M.D.

ST. LOUIS, MO., Nov. 4, 1891.

WASHINGTON AS A MEETING-PLACE.

To the Editor of THE MEDICAL NEWS,

SIR: I consider Washington to be so clearly the best place for our Congress that I am moved to say a word as to the cause of the diarrhea from which I, in common with many others, suffered during our second and very successful meeting.

The water was not to blame. I drank no drop of it, except as it was used boiled in coffee. I know of others who suffered despite this and every other precaution; also, the manifestation was too general to have been due to food, for it affected people living in hotels and in private houses. Finally, it existed over a large part of the country—in Newport, R. I., for instance, whither I went after a week in the Maryland hills, where also it was sharply felt. The cause, therefore, was not the product of Washington, nor should it be allowed to influence us when again we come to summon, for a like purpose, the remarkable body of men which constituted the Congress.

Yours truly,

WEIR MITCHELL, M.D.

1524 WALNUT STREET, PHILADELPHIA.

CORRECTION.

To the Editor of THE MEDICAL NEWS,

SIR: Will you do me the favor of making the following corrections in the report of my remarks before the American Electro-therapeutic Association that appeared in THE MEDICAL NEWS of October 31st. Near the bottom of the second column of page 521 I am represented as saying that I had abandoned puncture because I feared failure. What I did say was that I had abandoned abdominal puncture, not because I had any bad results, but because I feared unpleasant consequences, as others had reported them. I am still in favor of vaginal puncture, and believe it harmless when properly done under appropriate indications.

The final sentence of the second paragraph on page 522 should read: "In some sensitive conditions the negative pole cannot be used satisfactorily unless the faradic current is employed afterward."

A. H. GOELET, M.D.

REVIEWS.

THE REFRACTION OF THE EYE: A MANUAL FOR STUDENTS. By GUSTAVUS HARTRIDGE, F.R.C.S., etc., with ninety-eight illustrations and test types. Fifth edition. Philadelphia: P. Blakiston, Son & Co., 1891.

THIS most excellent handbook is now so well known as perhaps the best concise, small treatise upon the subject that nothing more is needed than merely to call attention to the introduction of considerable new matter into the fifth edition and a careful revision of the whole work. The only fault that may be found with the work is one that it has in common with all works of the kind: after the refraction is made and the prescription written no word is said as to the hundred and more faults of construction and adjustment of the spectacles that neutralize, change, or increase the improper functions of the eye which the oculist hoped to correct. Hardly one out of a hundred pairs of spectacles sold and worn is properly made or accurately and scientifically adjusted. Every such fault has a medical significance. This dereliction of duty on the part of the optician is at the expense of the oculists, and these should hammer away at the wrong until it is corrected. There is no reason against, but many for, the advisability of the physician taking the matter up himself.

A CLINICAL TEXT-BOOK OF MEDICAL DIAGNOSIS FOR PHYSICIANS AND STUDENTS, BASED ON THE MOST RECENT METHODS OF EXAMINATION. By OSWALD VIERORDT, M.D., Professor of Medicine at the University of Heidelberg. Authorized translation from the second improved and enlarged German edition, with additions. By FRANCIS H. STUART, M.D. With 178 illustrations, many of which are in colors. 8vo., pp. 700. Philadelphia: W. B. Saunders, 1891.

WE regret that this good translation of an excellent book is marred by a large number of errata, some of which are noted in a table, and others, such as *sulphate* of ammonium for ammonium *sulphide*, *chloride* of mercury for *bi-chloride* of mercury, and the like, must be detected by the reader. The directions for examinations of patients are thorough, detailed, and accurate; and the explanation of the signs and symptoms discovered, while not in all cases beyond dispute, is at least tenable, and in the main that which has received the support of the best professional opinion. The arrangement of the material is admirable. General considerations precede detailed study of special organs. In the special sections the order is logical, and the phraseology, when not obscured by the translator, lucid. Space does not permit us to review in detail the views of the author or to criticise other than a few special points.

We would suggest that in the section upon subnormal temperature, mention might have been made of the continuous subnormal temperature which occurs at times in epidemic influenza, and even persists long after recovery from the acute symptoms; while the statement that subnormal temperature during recovery from fever occurs only at crises is misleading, for, as all know, it is an ordinary feature of convalescence from typhoid. We are glad to note the importance paid to inspection of the thorax—a method of examination too often neglected, probably because of the trouble and loss of time involved in removal of the clothing. We should hesitate to diagnosticate any case of thoracic disease without inspection of the naked chest. The author believes that "lagging" of one side or one portion of the chest, detected most easily by palpation, may be for some time the only symptom of beginning phthisis, of pneumonia, pleurisy, infarction, etc. The acoustic principles underlying percussion and auscultation are well elucidated. We note in passing that the author lays comparatively little stress upon the so-called "cracked pot" sign as indicative of a cavity. Much more significant does he consider change of sound upon opening or closing the mouth while percussion is made over a cavity (Wintrich), and the change in percussion-sound produced by difference of posture and due to the shifting of fluid within the cavity (Gerhart). In the excellent study of cardiac sounds, we should have liked to have seen some emphasis laid upon the frequent occurrence of an aortic

systolic murmur that is not due to stenosis. The section upon sphygmographic signs is much better than in most books of the kind; that upon microscopic examination of the blood is also very good. Among throat affections we are glad to find "pharyngo-mycosis leptothricia" specifically recognized. The section upon the examination of the contents of the stomach, as might be expected in a German treatise, is quite full. That upon cerebral localization is illustrated with a number of very good diagrams. There is a fairly good index.

While for distinct pictures of special diseases, such as we find in Da Costa's *Diagnosis*, one searches this volume in vain; on the other hand, it has a special value of its own in that it gives much detailed information concerning methods of examination, not to be found so readily and so consecutively in other works. We can cordially recommend it to the physician and to the student as one of the most useful of a number of works upon diagnosis which they will need in study and in practice.

Transactions of the Southern Surgical and Gynecological Association. Volume III. Third Session, held at Atlanta, Ga." 8vo., pp. xli, 444. Published by the Association. Philadelphia: Wm. J. Dornan, 1891.

This volume is made up of thirty-one essays upon surgical and gynecic subjects, together with the discussions thereon. The field covered is a wide one, which will prevent a detailed review. In general it is sufficient to say that the character of the papers and discussions is high, and reflects credit upon the Association. Among the papers deserving special notice, either because of the excellence of their preparation, or because their appearance is opportune, we mention: "The Health of the American Girl, as Imperilled by the Social Conditions of the Day," by George J. Engelmann, M.D.; "How shall we Treat our Cases of Pelvic Inflammation," by Richard B. Maury, M.D.; "Inflammation In and About the Head of the Colon," by L. S. McMurtry, M.D.; "Operation in Ectopic Pregnancy," by Charles A. L. Reed, M.D.; and "Cancer of the Cervix Uteri in the Negress," by Howard A. Kelly, M.D.

The article by Dr. Engelmann is a careful review of the modern conception of the relation between civilization, especially current educational and social methods, and sequal disorders in women. It is presented in the thoroughly complete and scientific manner characteristic of its author. The immediate future will demonstrate the truth or falsity of the author's views; for if true, the very general diffusion of the modern education among the people will produce results so palpable as to be demonstrative.

Dr. Maury presents the modern conception of pelvic inflammation: the pathology, that of Bernutz; the treatment, that of the gynecologists of the day. The pathology of non-puerperal pelvic inflammation is salpingitis, with its complications; that of puerperal pelvic inflammation is usually the same, but at times is a true cellulitis. Cellulitis is an acute, not a chronic condition. The treatment of salpingitis, except in mild cases, and especially when pus is present or attacks of peritonitis recur, is removal of the uterine appendages by abdominal section. The discussion showed that the sound views of the author were shared almost unanimously by the Association.

The paper by McMurtry on appendicitis, and the discussion, are in entire accord with the recent papers by Fitz, Weir, Treves, Morton and McBurney. The trend of opinion is decidedly toward early operation for appendicitis—on or before the third day, unless improvement takes place—and toward immediate operation for perforation or spreading peritonitis. The evil effect of opium in masking the real nature of the case is insisted upon.

Dr. Kelly reports two cases of epithelioma of the cervix in the negress; one of the women, so far as could be learned, was a pure negress, while the other had a slight admixture of white blood. Allusion is made to four other cases of carcinoma in the negress seen by him in Baltimore, and to a case recently published in Boston. These cases comprise the literature of the subject. Heretofore the negro has been thought to be exempt from carcinoma. In all the cases, there was perhaps an admixture of white blood some generations back; or it may be that the influence of civilization has made the tissues of the negro vulnerable to carcinoma.

Diseases and Refraction of the Eye. By M. C. Macnamara, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital; Surgeon and Lecturer on Surgery, Westminster Hospital, etc.; and Gustavus Hartridge, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital; Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. Fifth edition. Small 8vo, pp. xv., 604. Philadelphia: P. Blakiston, Son & Co., 1891.

The incorporation of the fifth edition of the well-known students' manual on the *Refraction of the Eye* of Mr. Hartridge with Mr. Macnamara's *Manual of the Diseases of the Eye* into a single volume is a most excellent and happy combination. Careful comparison of the two parts with the last editions of the authors' previously separate works shows extensive and painstaking revision. Amongst the most important changes, the entire subject-matter has been brought to date, side-headings, names of authorities, and the imperfect chromolithographs found in the work of Mr. Hartridge have been all properly omitted; the sequence and naming of chapters have undergone rearrangement; and even entire paragraphs have been transposed, judiciously pruned and rewritten: altogether, there has been much gained by the association. Unfortunately, however, the chapter on anatomy by Dr. Johnson, which prefaced the last separate volume of Mr. Macnamara, has been broken into parts, with and without foot-note references to the writer, and relegated to the various chapters to which the special subjects belong, thus causing the work of Dr. Johnson to practically lose its autonomy in the combined volume.

After a most pleasant and instructive reading of the entire volume, it can be justly said that both the authors and the publishers are to be congratulated upon the careful revision and excellent production of this most praiseworthy work—a work which, we unreservedly as-

sert, is, for the student and the general practitioner, without exception the best, the safest and the most comprehensive manual upon the subject published at the present time.

NEWS ITEMS.

The Orton Prize.—At the annual meeting of the New York State Medical Association, held in New York on October 28–30, the J. G. Orton Prize of $100 for the best short, popular essay on some subject connected with practical sanitation was awarded to Dr. Howard Van Rensselaer, of Albany, N. Y., for an essay on "Impure Air, and the Ventilation of Private Dwellings."

The Medical Society of the State of New York will hold its next meeting at Albany, February 2, 3, and 4, 1892. Dr. Seneca D. Powell, of New York; Dr. James D. Spencer, of Watertown; and Dr. Franklin Townsend, of Albany, have been appointed the Business Committee.

The University of Munich has offered a prize for the best thesis during the session of 1891–92, upon "Experimental and Clinical Investigations as to the Occurrence and the Diagnostic Significance of Leukocytosis."

Transmission of Tuberculosis by Railway Coaches.—Investigation has shown that four of ten railway coaches running between Berlin and Meran contained small numbers of tubercle-bacilli of only moderate virulence.

Adamkiewicz has been granted permission to utilize the material at the surgical clinic of Albert, at Vienna, in the pursuit of his investigations with a remedy for carcinoma.

The German Government has directed the establishment of a modern, well-equipped biologic station on Heligoland.

Docent Obrzut has been elected Professor Extraordinary of Pathological Histology in the Czech University at Prague.

Gram has been made Professor Extraordinary of Pharmacology at Copenhagen.

Cschiesch, of St. Petersburg, has been elected Ordinary Professor of Psychiatry at Dorpat.

A new Austrian Military Pharmacopœia is to enter into force in January, 1892.

Loeffler, of Greifswald, has been elected Ordinary Professor of Hygiene at the University of Marburg.

CORRECTION.

In the "Hospital Note" on page 515 of THE NEWS of October 31st, the name Stite throughout should have read *Stile*.

BOOKS AND PAMPHLETS RECEIVED.

Christianity in Japan and the Leper Problem. By Albert S. Ashmead, M.D. New York: Moore & Co., 1891.

The Post-partum Douche. By Edwin Pynchon, M.D. Reprint, 1891.

Some Syphilitic Lesions of the Eye. By H. V. Würdemann, M.D. Reprint, 1891.

Addresses, Papers, and Discussions in the Section of State Medicine at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., May 5–8, 1891. Chicago: Printed at the Office of the Association, 1891.

The Place of Fixation in the Traction Treatment of Hip Disease. By Robert W. Lovett, M.D. Reprint, 1891.

The Prevention of Morphinism. By J. B Mattison, M.D. Reprint, 1891.

A Plea for the Extra-peritoneal Treatment of the Stump in Abdominal Hysterectomy for Fibroids. By A. Lapthorn Smith, B.A., M.D., M.R.C.S., F.O.S.L. Reprint, 1891.

A Practical Treatise on the Diseases of Women. By T. Gaillard Thomas, D.D., LL.D. Sixth Edition, Enlarged and thoroughly Revised by Paul F. Mundé, M.D. Philadelphia: Lea Brothers & Co., 1891.

Comparative Anatomy of the Domesticated Animals. By A. Chauveau, M.D., LL.D. Revised and Enlarged with the co-operation of S. Arloing, Director of the Lyons Veterinary School. Second English Edition, translated and edited by George Fleming, C.B., LL.D., F.R.C.V.S., with 585 illustrations. New York: Appleton & Co., 1891.

Transactions of the New York State Medical Association for the Year 1890. Vol. VII. Edited for the Association by E. D. Ferguson, M.D. Published by the Association, New York City, 1891.

Essentials of Bacteriology. By M. V. Ball, M.D. Saunders's Question Compends, No. 20. Philadelphia: W. B. Saunders, 1891.

Physicians' Ready Reference Account Book. Arranged by Gideon C. Segur, M.D. Hartford, Conn.: Plimpton Manufacturing Co., 1890.

Artificial Anesthesia and Anesthetics. By De Forest Willard, M.D., R.M., Ph D., and Lewis Adler, Jr., M.D. Physicians' Leisure Library. Detroit, Mich.: George S. Davis, 1891.

Transactions of the State Medical Society of Wisconsin for the Year 1891. Madison, Wis.: Tracy, Gibbs & Co., 1891.

Diseases of the Skin. By A. Allan Jamieson, M.D., F.R.C.P. Ed. Third Edition, Revised and Enlarged. Edinburgh and London: Young J. Pentland, 1891.

History of Circumcision. By P. C. Remondino, M.D. No. 11 in the Physicians' and Students' Ready Reference Series. Philadelphia and London: F. A. Davis, 1891.

Mechanical Massage. By B. D. Eastman, M.D. Pamphlet, 1891.

Essentials of Nervous Diseases and Insanity; a Manual for Students and Practitioners. By John C. Shaw, M.D. Philadelphia: W. B. Saunders, 1891.

Ptomaïnes, Leucomaïnes, and Bacterial Proteids; or, The Chemical Factors in the Causation of Disease. By Victor C. Vaughan, Ph.D., M.D., and Frederick G. Novy, Sc.D., M.D. Second Edition, Revised and Enlarged. Philadelphia: Lea Bros. & Co., 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 7, 1891.

SIMONS, MANLY H., *Surgeon.*—Ordered to U.S.S. "Mohican."

DUBOIS, FRANK, *Medical Inspector.*—Ordered to U. S. S. "Philadelphia."

WOOLVERTON, T., *Medical Inspector.*—Detached from U. S. S. "Philadelphia," and ordered before Retiring Board.

BLACKWOOD, N. J., *Assistant Surgeon.*—Detached from U. S. S. "Newark," and ordered to Navy Yard, League Island, Pa.

BROWNELL, C. DEW., *Assistant Surgeon.*—Detached from Navy Yard, League Island, and ordered to U. S. S. "Newark."

LEACH, PHILIP, *Passed Assistant Surgeon.*—Detached from the Naval Academy, and ordered to U. S. S. "Monocacy."

PAGE, JOHN E., *Assistant Surgeon.*—Detached from the U. S. Receiving-ship "Independence," and ordered to the U. S. S. "Iroquois."

FIELD, JAMES G., *Assistant Surgeon.*—Detached from the Bureau of Medicine and Surgery, and placed on waiting orders.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIX. SATURDAY, NOVEMBER 21, 1891. NO. 21.

ORIGINAL ARTICLES.

FRACTURE IN THE UPPER THIRD OF THE FEMUR EXCLUSIVE OF THE NECK.[1]

BY OSCAR H. ALLIS, M.D.,
SURGEON TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

FRACTURES in the upper third of the femur are infrequent. In the aged, violence to this part is likely to fracture the neck, while in active middle life dislocations are not infrequently the result of violence that might otherwise produce fracture in the shaft. To what extent the frequency is modified by other injuries I cannot say, but the statement is verified by statistics. In the tables of Agnew's *Surgery* I find an average of 5 cases a year during a series of years when the Pennsylvania Hospital was the principal hospital in the city. Supposing Philadelphia to have had an average population of 500,000 during these years, this would give an average of 1 case in every 100,000 inhabitants. Even this would give no mean experience were such an injury to come annually to one surgeon, but when we consider that every city of such dimensions has a score of surgeons, it is not improbable that some of them might pass their lives without ever treating a single case.

I have called attention to this fact to show, first, how improbable it is that any single surgeon, writer or teacher should ever obtain a large *personal* experience upon this subject; second, to call attention to the statement of the most reliable authors that complete success in the treatment of this injury is not to be hoped for; that permanent *weakness* is likely to follow the most skilful employment of the most approved methods; third, to inquire into the nature of the deformity, the cause of the permanent "weakness," and the correctness of the methods of treatment; and, finally, with the hope that I may be able to stimulate investigation of a subject that has hitherto baffled the skill of our experts, that by a better and fuller understanding of it we may attain the success in this quarter that has so fully crowned the surgeon's labors in other fracture injuries.

In the study of the deformity that is so common after fracture, we rely mainly on the material of pathological museums. He who takes the trouble to investigate the specimens there collected, will find that in by far the greatest number union has taken place with angular deformity. I have not seen a single case in which the long axis of the shaft has been perfectly preserved. In the great majority, that which the surgeon calls shortening, and which in the living is ascertained by comparison of surface measurements, is found in the pathological specimens to be a somewhat complicated affair. In some instances there will apparently be great shortening, with but little overlapping, the loss in length being due chiefly to angular union. In the majority of cases, however, overlapping, angular union, with rotation of the individual fragments, exists.

The angular deformity seems to follow a law. In most instances it is forward and outward, or a blending of both. I have seen two specimens in which the angle of union was directed backward. Authors sometimes speak of angular projection inward. I have seen no instance of it. In most specimens the lower end of the short upper fragment is in advance of the upper end of the lower fragment. If we seek among authors for an explanation of this, we find a universal consensus of opinion that it is due to the action of the ilio-trochanteric muscles, and chiefly to the ilio-psoas. To bring this matter up for discussion, I will imagine a fracture to have occurred in the shaft of the femur, two inches below the lesser trochanter. The fracture is oblique, and all bony continuity is severed. We have now two fragments, *entirely independent* of each other, each free to follow any dominant force. The question is, What directions will the individual fragments take? We first take up the upper fragment. Here we have a portion of bone four or five inches long. The head of the femur forms a part of it, hence it is free to move, since it lies in a smooth, well-lubricated socket. This fragment is held in the socket chiefly by atmospheric pressure. Its motion is that of perfect circumduction within a large area of motion. It enjoys adduction, abduction, and flexion to a great extent, but extension —*i. e.*, deflection backward beyond the long axis of the trunk—is checked by the capsular ligament. The fragment is therefore free to move inward, forward, and outward, but is checked in backward movement. The position it almost invariably assumes in pathological specimens is forward or outward, and the alleged agency is the psoas muscle.

Let us now take up the lower fragment. It has no bony connection with the upper fragment. It, too, is free to follow a dominant force, and when it is remembered that to it are attached the strong adductors, the most natural conclusion is that the upper

[1] Read by title at the meeting of the American Surgical Association, held in Washington, D. C., September, 1891.

end of the lower fragment must be drawn inward and upward toward the pelvis. *Certainly, from an anatomical standpoint the fragments would be widely separated.* On the contrary, we invariably find them together. For the solution of this mystery we turn to the anatomy of the parts. It must be remembered that the point of supposed fracture is below the lesser trochanter. No fracture can occur here that does not traverse the tendons of many powerful muscles. Let us suppose the tendon of the great gluteus to have been traversed. (Fig. 1.) In such a case there would

FIG. 1.

Represents the upper third of the femur, sawn through so as to preserve a part of the tendon of the gluteus maximus as a hinge for the fragments. The tendon is represented below the great trochanter.

be a strong tendon hinge between the fragments, which, to a certain degree, would prevent independent movement and at the same time would exert a powerful influence upon both fragments. Such a hinge or bond of union would compel both fragments to move together in obedience to a dominant power. When, therefore, in the problem stated, I represented the fragments as *entirely independent* of each other, I misrepresented the facts, and the conditions of the problem must be re-stated:

Given a complete oblique fracture of the femur, two inches below the lesser trochanter, the fragments are *bound together* by a strong tendon hinge. Query: What direction will the fragments take? If we go to the pathological museum, the first specimen we encounter may present angular deformity forward and outward, with possibly rotation of the upper fragment outward. For the satisfaction of those who believe that the dominant influence is the ilio-trochanteric group of muscles, I will say that I can produce this deformity with artificial muscles in a dissecting-room specimen. But the question arises: Can the action of this group of muscles account for all the phenomena presented in specimens? I answer: No!—not a fourth part of it. A second question then arises: Cannot the same deformity be produced in an entirely different manner? I answer that it can. The mechanism of locomotion favors a totally different theory. All the powerful muscles of locomotion that pass from the pelvis to the knee either run parallel with a line that passes through the hip-joint and knee-joint (Fig. 2, A, B), or they pass internal to it. In a certain sense, the femur may be represented as a bent bow, and the muscles as the string of the bow; so long as the bow maintains its integrity, these muscles cannot approximate the knee to the hip-joint. But the instant fracture takes place, the fragments, free to move, yet *bound together* by a strong,

FIG. 2.

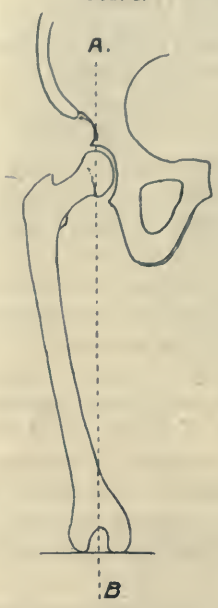


FIG. 3.

flexible tendon hinge, take the direction of least resistance, and that direction, when uncontrolled by external influences, is usually outward or forward. A study of Fig. 3, and of the anatomy of the part, will convince any unprejudiced mind that certain results are to be expected. First, the upper fragment is restrained from going backward by the ilio-femoral ligament; second, the curved shape of the femur and the bow-string principle of muscular action will tend powerfully to occasion, and be a guiding influence in the production of, both outward and forward displacement. Thus, in a dissecting-room specimen, with artificial tibio-pelvic muscles, I can produce the deformity that for centuries has been generally attributed to the ilio-trochanteric.

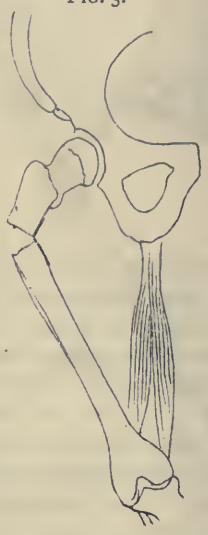
I have thus shown that the prevailing deformity can be produced artificially by forces dissimilar and widely separated. The question now arises: To which may it with greater justice be attributed? A contest of physical forces is involved; it is a question of mechanics, and, could all the elements of the problem be accurately stated, the mathematician could settle the question for us. As we cannot furnish exact data, we must content ourselves with approximation.

The problem remains: Which set of muscles is the more likely to produce the deformity—the ilio-trochanteric, or the tibio-pelvic? Or, in other

words: Which is the dominant fragment—the short upper, or the long lower one? Though apparently dissimilar, these are one and the same problem, and upon its satisfactory solution will hinge the choice of methods by the surgeon. In the solution of the problem, then, as to which set of muscles produces the deformity, we note, first, that all the ilio-trochanteric muscles (Fig. 4) act at a disadvantage. The

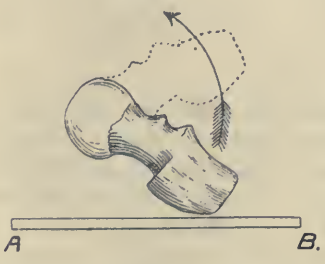
Fig. 4.

Fig. 5.



power acts on levers of the third class, and what increases the disadvantage is the fact that these muscles act upon the lever obliquely. Not so the tibio-pelvic muscles; their levers (after fracture, with a hinge) form what is known in mechanics as the "knee-joint," with unequal arms (Fig. 5), and the motive power is exerted to great advantage. Second, to produce the deformity, the ilio-trochanteric muscles must draw the short fragment upward with all the weight attached to the lower fragment, while the tibio-pelvic muscles can accomplish the same end by simply bending the "knee-joint" fracture. Third, if the upper fragment were drawn up by the psoas group, the lesser trochanter would be approximated to the pelvis in the direction of the contracted and shortened psoas muscle, and the fragment itself would be rotated outward. As a fact, in many specimens the upper fragment is so abducted that the distance of the lesser trochanter from the pelvis is increased, and the psoas muscle necessarily put upon the stretch. The truth of these statements can be demonstrated. First, as to rotation: If we take a normal femur, and lay it horizonally upon a table, with the anterior surface upward, it will rest as upon a tripod—*i. e.*, the two condyles will support it at one end, and the great trochanter at the other. (See Fig. 6, in which the great trochanter is represented as resting on a table, A, B. Note especially that the head of the femur lies an inch or more above the level of the table.) Now, in a specimen in the Gross cabinet, the upper fragment is so rotated inward that when the lower end rests on the condyles, the *head* rests on the table, and the trochanter is above the level of it. (See dotted line in Fig. 6.) If the normal femur is placed in the position of progression, the great trochanter lies posteriorly to the head. In the abnormal specimen referred to the trochanter lies in advance of the head. (See dotted outline, Fig. 6.) In this specimen, the trochanter minor lies posteriorly to the shaft when the femur is placed in the attitude of progression or support. This has placed the

Fig. 6.



tendon of the psoas muscle so strongly on the stretch that it has, through prolonged action, produced a groove on the *neck* of the femur. (See groove on neck in Fig. 6.) The presence of the groove is the result of the alteration in the axes of the fragments of the femur. It cannot be due to the attrition or pressure of the border of the acetabulum, for this is far out of reach, but must be due to pressure from the psoas tendon, which, in this perverted position in attempts at progression, is especially tense. Finally, if the upper fragment be regarded as dominant, then we have great difficulty in understanding how angular deformity, no matter how slight, directed backward, can occur. As already stated, I have seen this take place in two specimens. Authors even speak of angularity directed inward. On the theory that the long lower fragment is the dominant fragment, these exceptional positions can be explained. This, the long fragment, is the one the surgeon treats, and as the upper fragment is hinged to it, pressure unduly exerted may at times produce posterior or internal angularity.

Thus far I have endeavored to show that angular deformity would follow shortening—*i. e.*, the approximation of the knee-joint to the hip-joint after fracture of the shaft with *hinge* connection. I have now something both new and strange to offer. It is this:

Extension, no matter in what direction, will also produce anterior angular deformity. The principle on which this proposition rests is demonstrated as readily as is that already enunciated. Let any one take a card (Fig. 7), cut it so as to represent a carpenter's square; make a hole in each end; attach a weight to

one, and suspend it from a nail. So long as the integrity of the card is preserved, there will be an antagonism between the rectangular path of resistance and the direct path of the force represented by the weight (Fig. 7, A, B). Now cut the card, hinge it, and again apply the weight. The lower fragment being free to move, takes the path of the extending force,

FIG. 7.

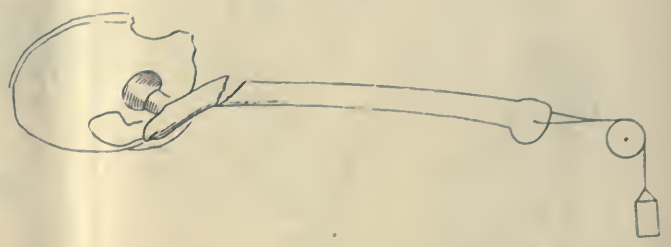
FIG. 8.

while its attachment to the upper fragment, not being in its axis, but extra-axial, so acts upon it that nail, hinge, and weight lie in the line of traction. (C, D, Fig. 8.) If the practical surgeon will stop a moment and compare the effect of traction *after* section with the effect *before* section, he will find that the card is distorted in both its parts. The lower fragment is turned away from its normal axis to conform to the line of traction. The lower end of the upper fragment turns abruptly from its normal bed and tilts inward. Thus, with a piece of cardboard the truth of the second proposition, that extension necessitates angularity, can be verified.

That which can be demonstrated with a card can with equal clearness he demonstrated upon a dissecting-room specimen. All that is needed is a shaft that arches forward, a head and neck obliquely attached to it, and a hinge between the fragments. Whether such a specimen be suspended, or extension be made horizontally, the angularity will be the same. Glancing at Figure 9, the first impulse would be to lift the lower fragment, and then make extension; but, I repeat, the same degree of deformity persists, and my proposition holds good that extension, no matter how exerted, must produce deformity.

DIAGNOSIS.—This requires us to locate the point of fracture and ascertain its characteristics—*i. e.*, whether oblique or transverse, etc., and if oblique, the direction of breakage. We must therefore ascertain the degree and extent of local damage;

FIG. 9.



whether the hinge is short or freely torn; whether the upper fragment is flexed, abducted, or rotated; the degree of flexion, abduction, and rotation; the cause of the malposition, and the agencies that oppose coaptation. It is necessary to know the direction of the axes of the fragments, and whether the proposed treatment corrects the existing deformity. It is necessary to estimate the nature of the "shortening," and without data to learn to what it is due. It is necessary to estimate the relative amount of shortening without a record of the conditions of the limbs before fracture. *It is necessary to do all this with a limb that we cannot span with our two hands, and through a padding of flesh from one to four inches thick!*

TREATMENT.—Erichsen, with a degree of candor that does him great credit, says that, adopt whatever plan we will, the result will not be satisfactory. That this is the experience of all surgeons, I dare not say, but I believe that few—very few, indeed—can dissent from it. An inquiry into the defects of treatment, therefore, should be an earnest, persistent study.

Probably the most extensively applied treatment of the day is horizontal extension. Its popularity consists in the fact that in no other way can extension be so readily and certainly applied, and upon the theory that by properly regulated extension the upper fragment can be drawn down and approximated to the lower fragment. The theory is based on faulty reasoning, and clinical results bear me out in my statement. Extension cannot draw down the upper fragment, even in a dissecting-room specimen. The reasons for this I have already given.

To overcome the tendency to anterior tilting of the upper fragment, the double inclined plane was devised. Its theory was to adjust the tractable lower fragment to the intractable upper one. Its defects are—first, that no adjustment can take place so long

as there is shortening; and, second, that all attempts to overcome shortening by extension necessitate angular deformity. The double inclined plane has no advantage whatever over horizontal extension, both being equally unscientific and disappointing.

Every method of treatment hitherto devised has been directed chiefly to the lower fragment. That

Fig. 10.

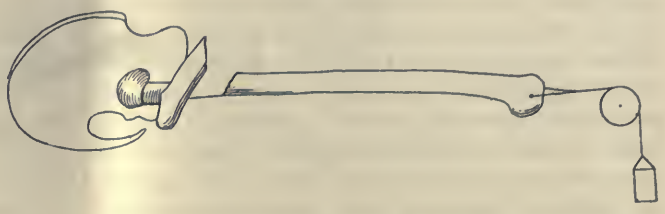
Fig. 11.

such a course has done all for human suffering that it can possibly do is probably beyond dispute. That such a course has produced untold deformities is equally as true, and equally as demonstrable. If we glance at Figs. 10 and 11, we note that the instant that fracture takes place and all parts feel the influence of the extending weight, we find both fragments diverted from the normal position, and the reason is that the weight through the hinge acts only upon the upper fragment. It should be especially noted that while the upper fragment (Fig. 10) seems to be greatly diverted, the lower is equally so.

The length of the hinge or bond of union between the fragments should be carefully noted. If it be a close, short hinge, it will have more control over the upper fragment than if it be a long, loose hinge. Note particularly how much more the upper fragment is tilted in Fig. 11 than in Fig. 10. This diagram (Fig. 11) should be most suggestive to the practical surgeon with a recent fracture to deal with. With the upper fragment tilted up, no matter from what cause, with strong, contracted ilio-trochanteric muscles, goaded by pain, and now acting at the greatest possible advantage upon the short, flexed upper fragment, the surgeon attempts to draw it down by extension! (Fig. 12.) Extension—and through what medium, I ask? Not upon the fragment itself, because the fracture forbids this, but *extension solely through a loose ligamentous extra-axial hinge!* As well attempt to stay the shadow of a passing cloud!

A study of the effect of traction in both these figures reveals two important facts: first, that both fragments are diverted from their normal axes; second, that the control of the upper fragment will vary with the length of the bond or hinge. The

Fig. 12.



degree of axial displacement and its ulterior effect must be especially noted. Authors have from very early times ascribed the resulting "weakness" in the limb to a weak bond of union. The real cause of weakness is the altered relation of the head to the socket, and of the condyles to the tibia. In Fig. 13 I have, by means of a cross-bar at the lower extremity, represented the plane of the articulation

Fig. 13.

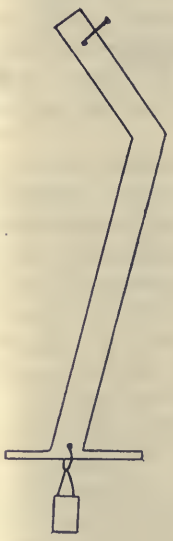


Fig. 14.

In Figs. 13 and 14 the cross-bar at the bottom represents the transverse axis of the knee-joint. After fracture that axis is greatly distorted when angular union takes place (Fig. 14).

at the knee-joint. Now contrast the altered plane of Fig. 14, after fracture, with that of Fig. 13. Could a person walk on such a limb? Experience and a knowledge of the laws of progression answer, No. If in such a limb the foot is placed in the attitude for locomotion, the head of the femur will be in a most unnatural position, while if the head is placed normally in its socket, the foot cannot bear the weight of the body.

I have condemned the various methods of treatment as unscientific and incapable of yielding satisfactory results. I have condemned them because no method of treatment hitherto devised is capable of controlling the upper fragment, and only the treatment that begins with fixation of the upper fragment has a rational basis for success.

The typical treatment, the only one that can insure perfect success, is the open method. A free incision would permit the fingers to be passed down to the fragments, and actual tactile impressions are the only assurance of accurate reposition. Fixation, then, with carpenter's screws would insure a useful limb. These I have used for years and know their superior value. I drive the head of the screw to the surface of the bone and leave it undisturbed until it is forced from its bed into the surrounding tissues by reparative changes in the bone. This usually occurs in the course of two months. Then I pick it out and the sinus soon heals. A less heroic, but far less certain and less effective plan, would be to thrust a strong, sharp-pointed awl through the skin to the femur, and with this held down, the lower fragment could be adjusted, a firm pad placed over the upper fragment, and the whole placed in a plaster-of-Paris splint. The temporary use of a steel pin would not increase the danger to the patient, but the pin to be of any service must be kept in place for weeks. That this would be without danger, I am not prepared to say.

In justification of the open method, I would cite the numerous cases of osteotomy performed to correct deformity in bone, that can now be referred to. Osteotomy to correct angular deformity is still sufficiently frequent, not only to justify the operation, but to guarantee its safety. A Swede came under my care who, though thirty weeks had passed since a fracture in the upper third of the femur had taken place, was still unable to walk without a cane. Angular deformity, with shortening of less than half an inch, was the cause of the "weakness." I cut down upon the bone at the point of juncture, sawed out a V-shaped section, secured the fragments with a screw, and the man recovered to earn full wages at hard, manual labor.

In illustration of the inefficiency of traction to bring down the upper fragment, and of the necessity of fixation of the fragments by means of a screw or some permanent method, I will cite a case of compound fracture of the upper third of the femur, that was treated at a Philadelphia hospital. Dr. R——, the house-surgeon, first made extension, but found that it did not influence the upper fragment. Then passing his fingers into the wound, he held the upper fragment while the lower was approximated to it by extension and manipulation, and finished the dressing with a strong, superimposed pad. So long as his fingers were upon the fragment he secured perfect approximation, but this he could not perpetuate by means of splints, and union took place with an inch of shortening and marked antero-lateral angularity. The splint used was the inclined plane.

SUMMARY.

After fracture of the shaft, the fragments are bound together by a hinge.

The hinge will be short if the vulnerating force was only sufficient to break the bone.

If the hinge is short, overlapping can only occur to a very limited degree. In all such cases the "shortening" will be due to angular displacement.

If the vulnerating force is greater than necessary to merely fracture the bone, the unexpended force will tear the hinge freely.

When the hinge is loose, overlapping, with or without angular deformity, is possible.

The shorter the hinge the greater will be the control of the upper fragment, through the agency of the lower.

Traction on the lower fragment under all circumstances is incapable of restoring the long axes of the broken bone.

If the hinge is short, traction will draw down the upper fragment, but cannot efface the anterior angular tendency.

If the hinge is long (Fig. 12), traction will exert but little influence upon the upper fragment.

Traction in the oblique direction has no advantage over horizontal extension.

The so-called "weakness" after fracture of the femur is not due to deficient bone-repair.

"Weakness" is greatest when due to angular deformity with rotation of fragments.

Angular deformity, with rotation of fragments, compels both hip and knee to assume abnormal relations to the trunk.

Shortening, due to overlapping, *without* angular deformity or rotation of fragments, is no barrier to heavy, manual labor.

Treatment directed to the lower fragment is the probable agency in causing rotation in the lower fragment.

No surface treatment can *insure* a useful limb.

Osteotomy has corrected many a faulty union after months of waste time.

The conversion of a sealed (simple) fracture into an exposed (compound) one offers the only possible means for accurate diagnosis, and the only possible method of rational treatment.

Patients and surgeons who stop short of this procedure must compromise with best results.

1604 SPRUCE STREET.

LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

With the Report of a Successful Case.

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Shall laparotomy be performed for intestinal perforation in typhoid fever? This is a question that, in the seven and a half years that have elapsed since Leyden first answered it affirmatively (May 24, 1884), has elicited a variety of affirmative and negative,[1] decided and qualified, confident and doubtful, bold and timorous replies from both physicians and surgeons, first in Germany and afterward in England, Ireland, America, France, Japan, Australia, and Russia. It is strange, nevertheless, that a question involving the only promise of help for 5.7 per cent. of all those dying of typhoid fever[2] should not have excited even more interest and discussion. The decision of the question demands a preliminary reply to the question of the efficacy of other modes of treatment. This inquiry is the more easily conducted because the indisputable spontaneous recoveries after perforation reported by Murchison, Griesinger, Buhl, and others, are so exceedingly rare that they are reckoned among the curiosities of our observations, and because no medical writer, so far as can be ascertained, has offered the least ground for hope from the employment of medical treatment when this pathological accident has occurred. Louis,[3] who has recently studied this point, refers to Ziemssen (1888), Spilmann, and Garszinotty and Jaccoud as authorities, and it would be easy but superfluous to increase the number of distinguished and unanimous observers by a reference to American and English authors. The opium treatment of peritonitis has of late years been so freely combated by advocates of flushing, drainage, and free catharsis that it will soon be definitely reckoned among the relics of medical medievalism.

The most important objections raised against laparotomy in typhoid intestinal perforations are that the patient's tissues are degenerated, offering unfavorable conditions for healing, and that the typhoid fever is still in progress and must be recovered from, in addition to the shock and traumatism of the operation, and in addition to the peritonitis. That healing takes place in the ulcerated bowel when sutured is easily proved by the post-mortem examinations made in the fatal cases operated upon, as well as by the mere fact of recovery in the cases that have pursued a favorable course. That the operation itself adds to the danger by consuming the patient's limited stock of vital energy through shock, traumatism, and the damage done by anesthetics is not to be gainsaid. But I maintain that laparotomy, performed as I shall describe, does not necessarily kill by itself, and that it is not more dangerous *per se* than other operations occasionally and successfully performed in the course of typhoid fever and other febrile diseases. It is not the operation that destroys life; it is the violent suppurative and putrefactive peritonitis set up by the feces poured out into the abdominal cavity. The quantity of feces escaping is the less important, because even a small amount is sufficient, by virtue of the multiplication of the mixed varieties of bacteria in the exudate, to fill the belly in a few hours with quarts of stinking, virulent pus. A remedy for perforative peritonitis in typhoid fever, outside of mechanical removal of the feces and gas from the abdominal cavity, mechanical closure of the hole through which it escaped, and provision for constant mechanical removal of the peritonitis-exudate, is, in the present state of our knowledge, rationally inconceivable.

Shall laparotomy be performed in all cases? This inquiry, in its categorical form, admits easily of a negative reply. It is only when we come to set down hard and fast rules for discrimination that differences of opinion arise. Thus, in a paper discussing this point before the American Surgical Association in 1888, J. Ewing Mears drew the conclusion that surgical interference is not justifiable when the fever is at its height; and, secondly, that in mild cases, when perforation occurs at the end of the third week, laparotomy may be performed. With these conclusions Dr. B. A. Watson agreed. Dr. Bontecou, who had twice operated, dissented, and held that the indication for laparotomy is imperative.

To be brief, however, the horns of the dilemma are—the one that the patient will almost certainly not recover without the operation, the other that the patient may recover with the operation. We are therefore not any longer in a position to reject laparotomy, except when the patient is actually in a moribund state. Considerations of policy are to be set aside by placing the responsibility upon the shoulders of the patient or his friends, while the thought of a broken record of recoveries from laparotomy is unworthy of honorable consideration. Hoelscher,[1] who studied the records of 2000 lethal cases of typhoid in the Munich Hospital, states that no deaths from perforative peritonitis are recorded as occurring in the first two weeks of the disease. Hence all the perforations occur either at the height of the disease (in the third week) or during deferves-

[1] Potain: Gaz. des Hôpitaux, 1891, lxiv. 621.

[2] Hoelscher (Münchener med. Woch., 1891, xxxviii. 43) found 114 deaths from perforation in 2000 deaths from typhoid fever.

[3] Progrès Médical, 1890, 2e sér., xii. 572.

[1] Münchener med. Woch., January, 1891, p. 43.

cence. We may therefore count that in case of recovery from the peritonitis the patient in some of the cases will have to pass through one-half of the entire course of the disease. The patient whose recovery is here recorded went through a typical course of typhoid fever, which ended two and a half weeks after the operation.

Hence it would seem that the stage of the disease, though perhaps slightly modifying the chances of recovery, does not in the least degree alter the responsibility of the physician. If the perforation occurs early, the patient's strength to withstand the peritonitis has not been exhausted by the disease; while if the accident takes place later, the patient, when he has survived the peritonitis, has but little of the typhoid to combat.

Collapse is a contra-indication to operation only when it is apparent that the condition itself is the immediate forerunner of death. Reaction must usually be sought before the operation is begun; but we must remember that hot flushing of the abdomen will often revive the patient.

The physician's duty, when facing such convictions, is manifestly clear. In taking charge of every case of typhoid fever, he is imperatively obliged by conscience to be ready to assume or to transfer to another the responsibility of laparotomy in case of perforation—just as in cases of croup he must, if necessity arise, be ready to mechanically admit air into the lungs. Furthermore, in view of the fact that early laparotomy may cut short the peritonitis, it is equally his duty in every case to inform the nurse of the symptoms of perforation, in order that, should the accident occur, he may be called instantly.

The diagnosis of intestinal perforation in typhoid fever may be very easy or very difficult. We have not time to discuss it fully; it must suffice to mention the chief symptoms that occur in typical cases. The presumptive evidence is in favor of a diagnosis of this accident when typhoid fever can be clearly diagnosticated and positive symptoms of perforation are present. Sudden, violent, abdominal pain, usually in the ileo-cecal region, is more conclusively diagnostic when it is of a cutting or tearing character, and when violent peristalsis, imprudence in diet, or improper posture has given an opportunity for local, mechanical injury. Examination within the first two hours will usually disclose tenderness as one of the chief distinctive features. But absolute disappearance of liver-dulness is to be regarded as a more crucial test, indicating the presence of free gas in the peritoneal cavity. This sign may be absent on account of the fact that only fluid matter has escaped from the bowel, or because, though gas has escaped, the abdominal walls are not separated from the liver on account of old adhesions. If much free fluid has escaped, or if peritonitis-exudate is present in quantity, it may be demonstrated by percussion, with the patient in different positions. Tympanites, if not already present, will soon follow the onset of peritonitis. The drawn, anxious face of the patient is covered with cold perspiration, and, as a rule, further evidences of shock are furnished by cold extremities, subnormal temperature, and a small, rapid pulse. When reaction takes place, the temperature rises, and the pulse increases in frequency, becoming, at the same time, quick and wiry. The signs of peritonitis soon increase in number, the knees are drawn up, the abdominal walls are tense, the tenderness and pain are great, and vomiting, often stercoraceous, is usually observed. Rarer symptoms are sometimes noted. Thus, Tschudnowsky heard in one case, on auscultation, a gurgling, amphoric murmur, synchronous with respiration, which was thought during the life of the patient and was found at the autopsy to be due to gas and fluid running in and out of the opening.

It is most important to make a diagnosis before peritonitis has become violent and general, since every minute of delay adds to the danger to life. And I would especially insist that while the presence of general peritonitis increases our obligation to operate, it is unnecessary and wrong to wait for symptoms of inflammation before opening the abdomen; for absorption of the intestinal contents through the peritoneum is probably alone sufficient to destroy life. It should further be borne in mind that while preparations are being made for laparotomy, under the most favorable circumstances requiring from thirty to sixty minutes, the patient may begin to exhibit more positive symptoms of the occurrence of the accident.

CASE I.—Miss S., aged thirty-one, height five feet six inches, weight one hundred and forty pounds, was seen for the first time by Dr. John Fisher, June 24, 1891. The patient, who had previously enjoyed perfect health, had been ailing with headache and chilly sensations for a week. Two days previously she had had slight chilly sensations; the temperature at the time of the first visit was 103°, the pulse 112 per minute, and the tongue dry. A diagnosis of typhoid fever was made. Small doses of antipyrin relieved the headache, and slightly reduced the temperature. The patient was kept on fluid diet. On the sixteenth day the temperature seemed normal, and at the end of the third week she began attending to light domestic duties. After having been apparently devoid of fever for fourteen days, the thermometer not being used, she had a chilly sensation on July 17th. On the following day, Dr. Fisher found a temperature of 104°, a pulse of 120 per minute, severe headache, and much prostration. Dr. Fisher diagnosticated[1] a relapse of

[1] There was no evidence of dysentery or other bowel trouble.

typhoid fever, and instituted the same treatment as before. On the seventh day of the supposed relapse, the bowels not having moved for thirty-six hours, an enema of warm water was given. This, in a few hours, was followed by two passages and by a third at four o'clock A.M. of the eighth day. At five o'clock she was attacked suddenly with great pain in the ileo-cecal region, followed by a cold sweat, coldness of the extremities, and an excessively pinched and anxious expression of countenance. Dr. Fisher saw the patient at seven o'clock, and found a temperature of 105.5°, with a quick, wiry pulse of 126. The pain almost ceased soon afterward, without the administration of anodynes. Dr. Fisher recognized the symptoms as those of intestinal perforation. On seeing the patient with Dr. Fisher at nine o'clock, I confirmed his diagnosis by consideration of the following points:

First. The history of the case pointed indubitably to the existence of typhoid fever.

Second. The mechanical explanation of a perforation was supplied by the fact that active peristalsis had been excited by the enema.

Third. The symptoms of anxiety, pain, and shock were typical.

Fourth. The objective symptoms already noted were supplemented at that time (four hours after the accident) by a rising temperature (106°), and an increasing pulse-rate (132), plus the typical signs of peritonitis, viz., tympanites, tension of the abdominal muscles, and tenderness upon pressure over the ileo-cecal region.

On account of the lack of the friends' consent, the operation could not be begun until 2.40 P.M., when I opened the abdomen. The incision, in the median line below the umbilicus, opened the peritoneum through an extent of about two and a half inches, which afforded ample room. No gas escaped (the liver-dulness had not been altered), but more than a pint of fluid feces and exudate, mixed with flocculi of lymph, was removed. On gently pulling out coils of small intestine in the direction of the ileo-cecal valve, numerous ulcers—one or two of them almost perforating—were seen.[1] Flocculi of lymph over the surface of the inflamed bowels indicated the points where the peritonitis was oldest and most violent. That the peritonitis was general was demonstrated by the facts that all the coils seen were injected and dull-looking, and that the fecal matter was freely circulating in the peritoneal sac. When two or three coils had been drawn up and examined, the opening was found. It was irregularly circular, and about two millimeters in diameter. While the coil was held up (it being the only part of the intestine now exposed), the feces were carefully sponged off with sterilized gauze, and the opening closed with three longitudinal rows of interrupted Lembert sutures. The gut walls were so thick and so brittle from edema that three rows were thought necessary to insure strength. I did not look for other perforations in this case, because it seemed that the woman had a remote chance of recovery if she could be quickly put to bed. Consequently, not more than two and one-half feet of intestine altogether were exposed. The abdominal sac was now thoroughly and carefully washed out with nearly half a wash-boilerful of hot, sterilized water. The omentum was carefully drawn over the injured coil of intestine, and sutured to the mesentery. A large drainage-tube was passed to Douglas's cul-de-sac, and the remainder of the abdominal wound closed. The patient was much exhausted at the close of the operation, but was not in collapse, although the pulse was small and rapid, and the temperature high. On the following morning, at 9 A.M., the abdomen was enormously distended, and everywhere tender, and the patient looked moribund. Enemas of an ounce each of magnesium sulphate, glycerin, and water had been given three times, beginning two hours after the operation, once with a double dose, without effect. At eleven o'clock, however, the bowels began to move, and she had ten or twelve watery passages, after which she began to improve. The tympanites diminished, the pulse improved, and the amount of fluid aspirated from the tube was much diminished. The temperature remained at 103° for four or five days, when the symptoms of peritonitis began to disappear. The tube being withdrawn, the wound healed, and the symptoms of typhoid, running a normal course by a typical defervescence, ended in two and one-half weeks. The patient is now enjoying perfect health.

CASE II.—A. S., Bohemian, twenty-nine years of age, entered Cook County Hospital, June 12, 1891. She was stupid and dull, presenting all the classical symptoms of typhoid. No previous history could be obtained. The course of the disease was typical and regular until the morning of June 28th, when the patient got up and walked unobserved to the bath-room. She was taken back to her bed and immediately seemed to be in great pain. When seen by the house-physician the tense, rigid, distended abdomen, with loss of liver-dulness, pointed to perforation. Her general condition was that of collapse, the pulse being rapid and thread-like, and the skin cold and clammy. On being transferred to the surgical department I concurred in the diagnosis and opened the abdomen, seven hours after the perforation occurred. The peritoneal sac was found filled with thin, liquid feculent matter. The patient becoming rapidly worse despite stimulation, the operation was not completed. The patient died a few minutes later. At the autopsy an oval perforation was found in the ileum, 18 inches above the *caput coli*. The visceral peritoneum around the perforation was adherent for three-fourths of its circumference, the remaining portion having probably been loosened by the traction occasioned in walking. A second ulcer was found opening into a small abscess-cavity within the peritoneum. Adhesions shut it off completely from the general serous sac.

CASE III.—John Connell, thirty-five years of age, walked into the Cook County Hospital, October 30th, at 5 P.M. His temperature was 102°; pulse

[1] These ulcers were so numerous and so characteristic, as seen through the translucent bowel, that they must have been of comparatively long standing. I am strongly of the opinion that the temperature, especially of afternoons, had not been normal before the apparent relapse.

120, being small, soft, and irregular. The patient looked pale and haggard; his eyes were sunken; his abdomen was moderately distended, rigid, and extremely sensitive to pressure all over. His mind was dull. A diagnosis of probable typhoid fever was made. Fourteen hours later it was found that the liver-dulness was absent, and as the patient was in collapse a diagnosis of perforation was made. The patient being transferred to my service, the abdomen was opened and a perforating ulcer found about 12 inches above the ileo-cecal valve. The opening was closed by a double row of Lembert sutures. The abdominal cavity was filled with fluid feces and exudate. The peritoneal sac having been washed out and drained, the patient was put to bed in fair condition and lived fourteen hours. The autopsy showed general peritonitis. The perforation had been completely closed.

The *statistics* of the operation are as follows:

1884 (Sept.). Mikulicz: 4 cases, with one recovery, though unfortunately the diagnosis is doubtful.

1885. Lücke: resection, death.

1886. Escher: 1 case, recovery; but the case is regarded by Louis as one of appendicitis.

1886. Greig Smith: 1 case, doubtful diagnosis, death.

1886. Bartleet: 1 case, death.

1887. Bontecou: 1 case, death.

1887. Morton: 1 case, death.

1889. Bontecou: 1 case, death.

1889. Senn: volvulus and perforation, 1 case, death.

1889. Hahn: 2 cases, death.

1890. Kimura: 1 case, death.

To these 15 cases are to be added that of Taylor,[1] 1891, and the three reported here, making in all 19 recorded laparotomies, with four recoveries. The case of recovery of Mikulicz was stated by the operator to be of doubtful diagnosis. That of Escher was probably a perforation from appendicitis. Taylor's case should not be counted, as it was operated upon ten days after the onset of symptoms, and is, furthermore, not demonstrated to have been a typhoid perforation. If we include all the doubtful cases, the present recovery is, as appears from the literature at command, the seventeenth case and the fourth recovery. If we include only closely diagnosticated cases it is the twelfth case and the first recovery.

The *technique* of the operation, which has for its object three chief ends—closure of the perforation, cleansing of the peritoneum, and the institution of drainage—must be modified to meet the obvious primary considerations of minimum consumption of time, minimum manipulation of intestines, and minimum administration of anesthetics, together with maximum accuracy in closing the perforation and maximum care in the toilet of the peritoneum. The incision should be median, should lie at first below the umbilicus, and should at first be from two to four inches long, depending upon the thickness of the abdominal walls. If found desirable, its length may at any time be increased with the scissors. In the majority of instances the perforation is within two or three feet of the cecum, usually in the ileum, rarely in the colon. The perforation should first be sought by inspecting the presenting coils of the small intestine. In some cases (in two of my own) the perforation was found in this way without drawing out more than two feet of intestine. After examining these few coils, the appendix and small intestine, beginning at the cecum, must be carefully and completely examined on account of the great probability of finding the opening in one of them. The coils must be carefully drawn out with the finger tips, all stretching and forcible dragging being specially avoided for fear of tearing new holes through the ulcerated walls. When a small coil has been examined, it should be quickly and gently replaced. It must be remembered that quantities of "plastic lymph" usually cover the bowels where the peritonitis is oldest. They will often guide the operator to the opening, sometimes obviating the necessity of a systematic search. Occasionally the perforation will be found wholly or partly hidden by such a mass. If the operator has begun at the cecum he should continue to search successive coils of the small bowel until the perforation is found, or until the duodenum is reached. The colon may next be examined. Success in this operation will, however, rarely be obtained when so much manipulation has been resorted to. But, fortunately, it will be but very rarely required. The use of the test for perforation by gas-insufflation will not be resorted to, because in peritonitis with paretic bowel-walls the gas is difficult to remove; because it may itself make openings in the bowel, and because the intense artificial tympanites may interfere with respiration.

Once the perforation has been found, its treatment demands much care. In one recorded case, that of Lücke, the intestine was resected, but this can but rarely be required, since as a rule the perforation is only one or two millimeters in transverse diameter. It is indicated when the bowel is extensively ulcerated so that stitching is impossible. Orth tells us that the ulcers are almost always on the free border of the intestine. In this case the gut should be held up by an assistant and the opening quickly closed by a double row of interrupted Lembert sutures. The ulcer should not be trimmed. It does no good to trim it, because the frayed edges are turned inward and the trimming is a disadvantage as it takes time. The line of sutures should

[1] Lancet, 1890, i. 961.

be parallel with the long axis of the bowel. Interrupted sutures must be used because the intestinal walls are so edematous and soft that continuous sutures tear out in places, loosening the whole line.

When the first opening has been satisfactorily closed, shall we search for another? It would be erroneous to make a protracted search for a second opening, if one had been fortunately found, since, as a rule, only one opening exists. Still, as most perforations occur near the ileo-cecal valve, it would be advisable to examine the bowel near the cecum, especially if the first opening, by occurring in that region, rendered easy such an exploration.

The perforation having been closed, the coil of intestine in which it occurred is gently held by an assistant at one end of the wound until the peritoneal sac is carefully cleansed. This should be done preferably by means of a thick stream of sterilized salt solution, six-tenths of 1 per cent., at a temperature of from 105° to 112°. In emergencies boiled water will answer. The wound-edges should be held up and the abdomen freely and frequently flushed until the washings are clean. This part of the work is essential and can be accorded as much time as is necessary, especially since the action of the hot solution is stimulating and tends to prevent shock.

The coil of bowel that has been held by the assistant during the irrigation is now again examined to see that the stitches are in place and that the lumen of the tube is not dangerously diminished. The omentum is now drawn down over the coil of intestine and without tension fastened to the mesentery. Dr. F. B. Robinson has informed me that in his experiments on dogs he found that, unless the omentum is fastened by two sutures placed at its margin, it has a tendency to roll up. The hint may be taken in the disposal of the omentum over the coil of intestine in which the perforation has occurred.

Drainage is best secured by means of a large glass tube passed to the lowest part of the pelvis. The outer end of the tube is so arranged that it can, without disturbing the patient, be easily kept dry by suction every half hour. The nurse must be carefully instructed how to perform this important duty.

If the patient is not in a state of collapse, a rectal injection of an ounce each of magnesium sulphate, glycerin, and water should be given to prevent peritoneal exudation by producing a few watery passages.

The anesthetic should be chloroform, on account of its rapid, easy action, its slightly detrimental effect upon the lungs and kidneys, and its tendency to excite but little vomiting. Administered to full anesthesia until the perforation is found, it may be given in less quantity while the intestine is being sutured. A skilful assistant will, after giving a hypodermatic dose of morphine, conduct the entire administration with only a few drams of the drug, watching the steps of the operation to see when the different degrees of anesthesia are required.

The relation of the after-effect of the operation to the typhoid fever must be looked upon as a subject for serious study. Yet the operative danger is deeply overshadowed by that of the peritonitis, which we must expect to prove fatal in very many cases, even when rational treatment has been carried out. It is only by rapid, skilful, but above all by very early interference, that we can hope to materially reduce the death-rate from perforative peritonitis in typhoid fever.

Conclusions.

1. There is no rational treatment for perforation in the course of typhoid fever, except laparotomy.
2. The indication for laparotomy when perforation occurs in typhoid fever is imperative.
3. The only contra-indication is a moribund condition of the patient.
4. Collapse is often at least temporarily relievable by hot peritoneal flushing.
5. The stage of the fever is not to be considered as an indication or as a contra-indication for laparotomy.
6. The severity of the typhoid fever is alone not a contra-indication.
7. Early laparotomy offers the most hope.
8. The symptoms of peritonitis should not be awaited before operating.
9. In taking charge of all typhoid fever patients, it is the physician's duty to be ready, in case of perforation, to perform laparotomy.
10. The published statistics of laparotomy for this condition are strongly in favor of operation.
11. The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity, and thoroughness.

ERYSIPELAS AND ACUTE SUPPURATION IN THE MIDDLE EAR.[1]

BY H. V. WÜRDEMANN, M.D.,
OF MILWAUKEE, WIS.

IN a thorough search of the literature of the subject at my command I can find but little mention of erysipelas in connection with ear disease. With the exception of two "traumatic" cases, reported by Roosa,[2] occurring after a mastoid operation (which were probably due to this procedure), and that of dermal erysipelas of the auricles, nothing can be found. The latter complication is not

[1] Read before the Rock River Medical Society at Neenah, Wis., July 28, 1891.

[2] Roosa, St. John: Dis. of the Ear, 1885, pp. 521, 522.

uncommon, cases being sometimes seen in general practice.

The text-books generally speak of an extension of the cutaneous lesion to the larynx, and one of them[1] refers to the implication of the pharynx. Such authors as Bosworth,[2] Seiler,[3] and Gottstein,[4] make no mention of its arising in the pharynx or nasal membranes, and all works that I have consulted are silent upon its extension to or implication of the middle ear. Charles W. Allen,[5] in an able article upon the treatment of the disease and a report of fifty cases, does not refer to any of these complications. This writer states: "It is probable that every case of facial erysipelas arises from some local solution of continuity in the skin or adjacent mucous membranes. There is probably no such thing as idiopathic erysipelas. We simply call some cases 'idiopathic' or 'genuine' when we fail to find the point where the micrococci have entered." Now, the following cases would ordinarily be termed "idiopathic," but in the first the mycotic process probably originated in the pharyngeal walls, as a result of an operation; in the last case an initial lesion may have been caused by the act of picking the nose; and in the second, possibly the point of entrance was an abrasion from a pipe or cigar, as the patient acknowledged that he was a heavy smoker, and the disease began on the mucous surface of the lower lip:

Case I.—A bookkeeper, twenty-nine years of age, applied to me for treatment of his left ear, February 20, 1890. I found the tympanum filled with a serous secretion, which could be easily cleared away by inflation. After a few treatments he was discharged as cured, but again appeared April 29th, with pharyngitis and slight earache. A post-pharyngeal abscess was diagnosticated and incised, liberating three or four grams of pus. The pharyngeal tonsil, being hypertrophied, was subsequently removed by guillotine-forceps. Some relief was obtained by the operation, but two weeks later he returned with earache, with the drum red and inflamed. On the next day the membrane was bulging, and I performed paracentesis, releasing bloody pus from the cavity of the tympanum. The pain remained so intense that an opiate was administered, the patient ordered to bed, and leeches applied in front of the tragus. On examination of the pharynx its walls were found greatly tumefied, and of a dusky-red color. Ice was given the patient to suck, and boric acid and cocaine spray applied to the pharynx. The ear was dressed antiseptically.

On the morrow the left nasal cavity was swollen shut, the temperature 103° at my morning visit, and 105° in the evening; pulse 101. Erysipelas was suspected, as the anterior nares were dusky-red, and in the morning, when Dr. W. H. Washburn (the family physician) was called, the diagnosis was corroborated. The roseola now spread from the nostril as a focus over the entire face, swelling the eyelids, extending to the scalp, neck, and the auricles of both sides, within four days. At this time the temperature ranged from 102° to 106°, and the pulse was weak and rapid. The man retained little on his stomach, was delirious, at times having maniacal excitement and at others being almost comatose. Several consultations were held with other physicians, but the supportive and stimulant treatment instituted by the family physician was continued without much change. The ear was cleansed regularly, and dressed with boric acid powder. On the fourth day the pus was very thick and offensive, and continued so for a week or more. May 20th was the critical day, the fever suddenly abating, leaving the patient very weak. One relapse of erysipelas occurred from the 25th to the 29th. The patient gradually rallied, the otitis pursuing the usual course. The ear stopped discharging at the end of the sixth week, and the perforation closed. On June 28th the watch could be heard at 100 cm. from the ear (normal, 150 cm.) Since that time the patient has had several attacks of aural catarrh and pharyngitis, but no suppurative otitis.

Case II.—A mill-owner, fifty-three years of age, was seen in consultation with Dr. W. F. Miller, January 5, 1891. This was on the sixth day of an attack of facial erysipelas, that began on the mucous membrane of the lower lip. Two days previously earache had set in, and the pain was intense. The pharynx was inflamed, and the nasal passages almost occluded. The erysipelas involved the entire side of the face, and had been on the scalp, but had somewhat receded. The drum ruptured spontaneously, and some pus was discharged. The pain continued, and the mastoid became red and tender.

A small perforation could be seen in the membrana flaccida. As the patient was suffering from retention symptoms I made a free paracentesis in the membrana vibrans, which let out considerable thick secretion. The pain still continued, and morphine was given and leeches applied. Cocaine drops were ordered for the ear. The secretion remained thick and creamy for over a week. Antiseptic treatment was advised and used by the attendant throughout the case, and four weeks after the paracentesis I was informed by the physician that the patient had left town for his home in Montana, with the ear apparently well. The attack of erysipelas ended by lysis, with no relapses.

Case III.—A widow, twenty-five years of age, was seen in consultation with Dr. T. H. Hay, April 11, 1890. She was convalescing from a severe attack of facial erysipelas, which had already relapsed once. The disease had arisen at the right nostril, and had spread over the face and neck of the same side. There had been a case of erysipelas in the neighborhood which the patient had visited a few days before her present illness. She acknowledged the habit of "picking" the nose. On examination

[1] Roberts, F. T.: Practice of Medicine, 1884, p. 184.
[2] Bosworth, F. R.: Dis. of the Nose and Throat, vol. i., 1891.
[3] Seiler, Carl: Dis of the Throat and Nasal Cavities, 1889.
[4] Gottstein, J.: Die Krankheiten des Kehlkopfes, Wien, 1888.
[5] Allen, Chas. W.: "Treatment of Erysipelas," Amer. Journ. of the Med. Sciences, July, 1891.

the nasal passages were found swollen and the pharynx reddened. There had been sore-throat for some months; ear-trouble had appeared one week previously to my visit, the drumhead bursting spontaneously, setting free a large quantity of pus, but not giving much relief from the intense pain. The discharge was thick and profuse, and the mastoid was tender. Leeches and antiseptic treatment were used in the treatment of the ear. No erysipelas was seen at this time on the skin, although the temperature was from 100° to 103°, and the pulse rapid and feeble. A few days later the tip of the nose was again red and swollen. The patch gradually extended over the cheek, but at the end of four days had disappeared. The temperature then dropped to the normal. When the patient was seen May 17th the hearing-distance for the affected ear was normal, and the drumhead restored.

It will be noted that the three cases exhibited the ear complication at the beginning, middle, and end, respectively, of the erysipelatous attack. In all, the inflammation was very violent, differing from the ordinary purulent process in severity, and in that the discharge was thick and creamy from the first, maintaining its consistency to the end. The patients were all dangerously ill, and had excessive pain, which was not readily relieved. The secretion of Case I. was examined under the microscope, which revealed an abundance of pus-corpuscles with many epithelial masses. Under a higher power many cocci were visible. In my mind there is no doubt but that the suppurative complication was in each instance a true erysipelatous inflammation at the beginning, modified by its environment, propagated by an extension of the specific disease from the nose and pharynx through the Eustachian tube to the middle ear.

ON THE EVACUATION OF SPINAL ABSCESSES WITHOUT DRAINAGE.[1]

BY G. A. WRIGHT, B.A., M.B. OXON., F.R.C.S.,
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IT would be hard to find a surgical problem more difficult to solve than that of the best method of treating abscess arising from tuberculous disease of the spine. There are surgeons who never open a spinal abscess, and trust to one or another mode of treating the carious spine, in the hope of the abscess becoming quiescent or drying up. Others open abscesses only when they are on the point of bursting; others use aspiration, repeated twice, or more often, if the cavity refills; others open without draining by the old valvular incision; others open and drain, without doing more. Others again open and drain after washing out the cavity more or less thoroughly. Some open an abscess where it approaches the surface; others seek it at the nearest accessible point to the bone lesion. Treves, taking a rational view of the condition, sought to remove the cause of the abscess by reaching the carious focus and removing the dead or hopelessly diseased bone. Barker and others have dealt with the abscess cavity by careful cleansing and removal from it of all caseous and tuberculous material, as far as possible, with an attempt at obliteration of the abscess-cavity by immediate union of its walls. Other methods have also been adopted—hyperdistention of the sac, injections of various kinds, and so on. The very multiplicity of methods shows the inefficiency of any one to meet all cases. The ideal treatment would, of course, be a combination of Treves's and Barker's methods—the removal of the focus of disease to which the abscess is due, together with the removal of the contents and wall of the abscess-cavity. Unfortunately it is only in a very small minority of cases that this is practicable. As a rule, it is quite impossible to reach and clear away the carious focus in the spine. On the other hand, as, with efficient treatment, the bone-disease frequently becomes healed and the caseous material is detached and thrown off into the abscess-cavity, we may hope by thorough removal of the contents of that cavity to obtain a good result in a certain proportion of our cases, and this without leaving behind a possible source of future infection, such as after any of the other methods of treatment.

Barker's method must therefore be considered as the most scientific and practicable method of dealing with these difficult cases. Failure is due either to the fact that the disease in the spine is progressive, or to imperfection in the operation. The whole of the morbid material may have been removed from the abscess-cavity, and yet more may descend the (usually) narrow track leading from the diseased bone into the wider abscess-sac below. In such cases, even if the abscess has been obliterated after the first operation, it will sooner or later refill. The right treatment in such cases, I believe to be, to repeat the operation, just as in the first instance, and I would not hesitate to repeat it a third time, or oftener, if necessary. Therefore, if after the first operation a sinus forms and persists, it should be carefully scraped out again as soon as it is clear that sound healing will not occur; if left, tuberculous infiltration of the walls of the sinus is likely to take place. I have not entered into a detailed description of the operation; it is sufficient to say that a large opening should be made and the walls of the sac carefully scraped away with Volkmann's spoon or some other instrument, and well rubbed out with artificial sponges or similar material. The cavity should then be well washed out with an antiseptic lotion, and iodoform in suspension or solution, in-

[1] Read at the meeting of the American Orthopedic Association held in Washington, September, 1891.

jected. The excess of fluid should be squeezed out, the wound closed and dressed with firm pressure to keep the walls in contact, and, so far as possible, the cavity obliterated. If all goes well, no change of dressing is required for a week or two, and then if the case is successful, the wound is found healed.

Mr. Mayo Robson appears to have had considerable success in the treatment of these cases by repeated aspiration and injection solely of iodoform solution, but this cannot be looked upon as so perfect a method as Mr. Barker's, inasmuch as infectious material is far more likely to be left behind. While I believe that the principle of Barker's operation is the best, an examination of the notes of my cases shows that in most instances it has failed. The failure has been due not apparently to any septic condition, but simply to the fact that, as already pointed out, the whole of the disease has not been removed. My conclusions as to the treatment of spinal abscesses are:

1. The first essential is *rest*, in its surgical sense, to the spine.

2. When efficient rest has been provided, an abscess, unless it is increasing, should be left to itself for a period of not less than a month.

3. If the abscess increases and is evidently going to open spontaneously, or, if there is acute suppuration going on, the abscess should be dealt with by Barker's method, provided thorough asepsis can be assured.

4. An abscess that remains stationary for more than two months, or thereabouts, should be dealt with by Barker's method, provided that throughout the period *rest* to the spine has been secured.

5. Receding abscesses should be left alone.

6. Residual abscesses, if stationary or advancing, should be dealt with by Barker's method, and will nearly certainly be cured.

7. Refilling of an abscess or persistence of a sinus after evacuation should be dealt with by a repetition of the operation so soon as it is evident that repair will not take place, *i. e.*, usually in a month.

8. If there be a doubt about the real maintenance of asepsis, either from want of training on the part of the surgeon or his assistants, nurses, friends, etc., the abscess should either be left alone or dealt with by aspiration and injection of iodoform.

(I may refer to Mr. Barker's paper, *British Medical Journal*, February 7, 1891; to that of Mr. Mayo Robson, *British Medical Journal*, April 25, 1891; and, in the same number, to some cases of my own bearing on this question.)

The University of Moscow has received two hundred thousand roubles (one hundred thousand dollars) from an anonymous donor, for the establishment of a clinic of diseases of the skin and syphilis.

CLINICAL MEMORANDA.

A CASE OF MALFORMATION OF THE RECTUM AND IMPERFORATE ANUS.

BY J. W. SNOWBALL, M.D.,
OF PLAINFIELD, N. J.

THE child, a male, was born Monday, June 13, 1891, by breech presentation, the labor lasting about two hours and a half. At birth the child was apparently robust and perfectly formed, but on the following day the nurse called attention to the fact that there had been no movement of the bowels, and upon making an examination the anus was found to be imperforate. The external sphincter was formed, giving the anus its normal appearance, but protruding through it and attached all the way around to its internal margin was a small pouch of skin; this was clipped off and it was then seen that a very small opening existed into which a probe could be passed for about half an inch. This opening was enlarged a little, and the case was allowed to remain in this condition for two days longer, or until Thursday, in order to see if any pouching would take place. In the meantime the urine was closely watched for meconium, to determine whether there existed any communication between the bladder or urethra and the rectum; none was found, nor was there any abnormal opening visible. No further pouching at the anus took place, and the general condition of the child remained much the same.

Dr. W. J. Swinton was now called in consultation, and it was decided to attempt to reach the rectum and if possible bring it down and attach it to the anus. Accordingly an incision was made through the anus in an upward and backward direction for nearly an inch and a half. Dense tissue was encountered all the way, but no bowel was found. The results of colostomy were then explained to the parents, and they decided against it, preferring that the child should perish rather than go through life with an artificial anus.

On Friday and Saturday the child had several severe convulsions. I gave it small, frequently repeated doses of sodii bromidi, spts. frumenti, and tinct. opii camph. No more convulsions occurred and the only perceptible change in the condition of the child was its gradually increasing weakness, until Wednesday the 24th ult., when the abdomen began to swell, but this subsided in a day or so. On the following Wednesday a well-marked peritonitis again appeared and the abdomen became very much swollen, tense, and discolored. This continued until death. On Saturday fecal vomiting occurred and was repeated at intervals until death. No change in the appearance of the anus occurred and there was no pouching or discoloration at any point that would indicate that nature was endeavoring to find a rent. Death from asthenia and peritonitis occurred July 8th, twenty-three days after birth.

With the assistance of Dr. James Wood, an autopsy was held four hours after death. The rectum was found to end abruptly in a cul-de-sac just behind the bladder and a little less than two inches from the anus, with which it was connected only by dense connective tissue through which there was no opening.

Prior to the birth of the child there had been scarlet

fever in the family, but the mother had suffered with nothing more than a sympathetic sore-throat. The child had a bright scarlet rash on its body at birth, which disappeared on the second day, and was followed by a general and profuse desquamation.

OPERATION FOR HYDROCELE.

BY R. J. CHRISTIE, SR., M.D.,
OF QUINCY, ILL.

THE following method of operating for the radical cure of hydrocele, will, I think, be found to have certain advantages. It is particularly applicable when carbolic acid is used, but other fluids may be used by the same means. I have used carbolic acid only, as that agent is much less painful than others and quite as efficient.

Only two instruments are required—one being an aspirator and the other a hypodermatic syringe. The latter should have a capacity of thirty minims and a needle of largest caliber. After properly cleansing the scrotum, the hypodermatic needle is pushed well into the hydrocele and the wire passed into the needle and beyond the point to prevent choking of the needle and jagging by its point. Keeping the needle securely in the sac, the fluid is then drawn off with the aspirator or trocar. Having withdrawn the aspirator-needle, attach the hypodermatic syringe, filled with pure carbolic acid, to its needle, and inject from ten to thirty drops; clasp the tissues around the needle with the thumb and finger, withdraw the needle quickly, distribute the acid by gentle manipulations into all parts of the sac, envelop the scrotum in borated cotton or gauze, suspend the testicles, and the operation is completed.

If it is thought desirable, in order to prevent pain, cocaine may be injected through the aspirator-canula and allowed to flow out before the acid is injected, but the carbolic acid itself acts very quickly as a local anesthetic.

The acid should not enter the needle before it is ready to be injected, else it might coagulate the albumin and stop up the needle.

The only chance for septic contamination is in the passage of the instruments through the tissues, which can, of course, be avoided by sterilization.

The advantages of this procedure are as follows: In all cases where there is a doubt in diagnosis the needle removes it. It accomplishes the injection without any danger of infiltration. The quantity thrown in is definite to a drop. The method is thoroughly aseptic.

TWO UNUSUAL CASES.

BY JAMES MITCHELL, M.D.,
OF MADISON, W. VA.

A SWALLOWED SILVER HALF-DOLLAR PASSED BY THE BOWEL.

ON the 22d of April I was called in great haste to see E. G., a female, seventeen years old, who a short time previously, while amusing herself by holding a half-dollar in her mouth and at the same time talking and laughing with some friends, had swallowed the coin. I found the family much excited, while the young woman herself was intensely alarmed. She pointed to the place where she thought the erratic half-dollar had found lodgment. The breathing was accelerated, but there was no dyspnea; neither was there pain or soreness at the point designated. Careful manipulation failed to detect anything in the throat. The girl was able to swallow a glass of water without any difficulty.

I informed the family that, beyond all doubt, the coin had already passed into the stomach where it would do little or no harm, and that there was some hope that the coin would be evacuated by the bowel. Three days later the last event transpired.

WORMS IN THE AUDITORY MEATUS.

On the 17th of October, 1891, W. B., a stalwart colored man, between twenty-five and thirty years old, entered my office complaining of pain in his ear, which he ascribed to the presence of a worm. Blood and pus were oozing from the ear, inspection of which disclosed the presence, deeply within the meatus, of a very lively white worm, which I succeeded in removing by means of a grooved director, and the procedure was repeated until I had removed four worms. The worms when removed were about half an inch in length, but when placed on a shingle they stretched out to an inch or more. They appeared none the worse for the rough handling they had received, for they continued in active movement, crawling like the earth-worm, but with much greater celerity. They were perfectly white, except for the head, which was small, black, and hard. I have never before seen any worm like them in the human ear or elsewhere, nor can I find a description corresponding to them in any of my books.

HOSPITAL NOTE.

REMARKABLE CASE OF VOLUNTARY CONTROL OF MUSCLES.

BY JOHN H. BRINTON, M.D.,
PROFESSOR OF THE PRACTICE OF SURGERY AND CLINICAL SURGERY AT THE JEFFERSON MEDICAL COLLEGE.

[*Clinic of the Jefferson Medical College Hospital, Oct. 31, 1891.*]

BEFORE dismissing the class, I wish to bring before you C. E. H., aged thirty-four years, married, Pennsylvanian, an iron-moulder by trade. Since boyhood he has possessed the power of individual contraction of many muscles, and of apparent dislocation, or subluxation, of certain joints. For the last two and a half years he has given public demonstrations of these muscular contractions about six or eight times daily, but has limited the joint-displacements to once a day.

When directed, the man contracted the *platysma myoides*, first on one side and then on both. The "risus sardonicus" was marked, and the elevation of the superficial fascia was demonstrated, so that the pumping effect on the veins coming from the head, as pointed out by Hyrtl, of Vienna, became manifest. The *sterno-cleido-mastoid* muscles were then contracted first on one side and then on both simultaneously, in their clavicular and sternal origins. The bellies of the muscles, and their insertion, were brought into strong relief, and the triangulation of the neck was distinctly shown. The *pectoralis major* and *minor*, and the *latissimus dorsi* were

equally brought out, and the axillary cavity exhibited, with its anterior and posterior limits hard and rigid. The slips of origin of the *serratus magnus* were made to present like the teeth of a saw.

The *deltoid* and *biceps flexor cubiti* were next shown; the long and short heads of the latter were marvellously distinct, and the tendon of insertion, with its aponeurotic slip to the forearm fascia, was made to stand out. When the forearm was fixed, a wonderful contraction or wave of motion could at will be transmitted along the biceps belly from below upward. The heads of the triceps extensor were also well shown. The voluntary action of the *forearm muscles* was equally pronounced. The *palmaris longus* and the *carpal flexors* responded perfectly, and conraction of the spiral fibers of the *supinator longus* and *supinator brevis* produced a remarkable effect. The action of the muscles of the *lower extremity* was in like degree conspicuous, especially that of those inserted into the patella. The heads of the *quadriceps extensor* were relaxed at will, thus permitting free lateral motion of the patella, which could be made to assume a very oblique and approximately vertical position.

A varicose condition of the *internal saphenous vein*, throughout its entire course on the thigh and leg, could be instantly brought about by some voluntary effort, which at first sight seemed inexplicable. Above the knee the vein was greatly increased in size, and below on the leg, it became enlarged, tortuous, and distended with blood, exactly as in an ordinary aggravated case of varicose veins of the leg. The column of blood seemed very large, and communicated a purring thrill when felt. This varicosity did not seem to be the result of the contraction of any of the muscles of the groin. The man said that "the under-skin of the thigh felt tight," and referred the muscular sensation to the outer side of the thigh. On examination, great muscular tension was detected over the outer side of the thigh and hip with external rotation of the trochanter, and fulness anteriorly over the head of the femur, dependent probably upon partial subluxation produced by enforced action of the *glutei* and possibly of the *tensor vaginæ femoris* muscles. As this varicose condition was evidently likely to become a permanent one, a discontinuance of the distending practice was strongly advised.

By fixing the hand, the head of the humerus could seemingly be dislocated backward. An apparent luxation of the head of the femur on the dorsum of the ilium could also be produced by strong muscular effort, the limb being shortened, adducted, inverted, and the sole of the foot carried across the instep of the oppo-ite foot This latter sign was more marked than in the ordinary iliac luxation. It evidently depended upon a synchronous partial inward dislocation of the ankle. Careful measurement showed that the trochanter rose about one inch above Nélaton's line, not nearly so much as it should have risen had the luxation been veritable and complete. By Allis's test, the thigh was lengthened instead of being shortened. It was, therefore, evident that the luxation was partial, and that the femoral head rested on the upper and external portion of the acetabular lip, and was held there by great muscular effort.

In like manner it was manifest that the apparent luxation of the head of the humerus backward was incomplete, and was caused by similar voluntary muscular action. The dislocations of the *patella* were lateral and incomplete, and were nearly vertical. A complicated twist of the knee-joint was produced by manual force, the exact anatomical relations of which it was difficult to determine. At the ankle-joint a partial internal displacement could be developed at will. Imperfect motion could also be established at the junction of the manubrium with the body of the sternum.

The production of the displacements at the larger joints, the man states, is invariably accompanied by a sharp, twitching, nervous feeling, which extends up the spinal column to the base of the brain, and which is often followed by severe headache. In the development and reduction of these displacements he is conscious of the ligamentous and muscular strain, and can feel and hear the sliding of the bones, the sound of which can also be heard and the jerk seen by those around him, as you, gentlemen, can bear witness. The reduction can be readily accomplished, provided he is allowed to concentrate his mind upon his muscles, and is not disturbed by questions or otherwise interfered with. On one occasion, in attempting some abnormal movements at the articulations of the lower jaw, he really did produce a complete bilateral luxation, which he could not replace, which remained unreduced for two hours, and which was then reduced by a surgeon.

This man also possesses the power of slowing, almost to cessation, the radial pulse. This he accomplishes by voluntarily pressing the head of the humerus upon the lower part of the axillary artery and by general muscular compression of the arm-vessels. When this is done upon the right arm, the left radial pulse, as well as the femoral beat, is greatly diminished. The action of the heart is much slowed, and the beats become very feeble and indistinguishable. Auscultation shows the first sound of the heart to be slightly booming and muffled; otherwise the heart is normal.

The man has stated to me that he can at will arrest the flow of urine in full stream, and that during sexual congress he can for the time being hold or prevent, and also instantaneously interrupt the escape of semen, which must, therefore, pass backward into the bladder. If this be so, it evinces a remarkable control over the cut-off muscles of Wilson and Guthrie, and possibly over those of the bulb of the urethra. He has no voluntary control over the cremaster muscles.

The examination of the muscular movements and articular displacements in this case have been made with the coöperation of my colleague, Professor Keen, and that of the circulatory phenomena with the co-operation of Professor Hare.

MEDICAL PROGRESS.

A Case of Pneumothorax and Pneumopericardium.—LUNDIE (*Edinburgh Medical Journal*, September, 1891) reports the case of a clerk, twenty-two years old, who one day while at dinner, in apparently perfect health, was suddenly seized with severe pain in the left scapular region and shortness of breath. When seen, a few days later, the expansion of the left chest was deficient and the percussion resonance was heightened. The usual area of cardiac percussion-dulness was wanting.

The breath-sounds were feebly heard—in some places not heard at all. There was no elevation of temperature and the frequency of the pulse was but slightly accelerated. Under treatment, recovery progressively took place. Five weeks after the first occurrence, pain in the left side of the chest again set in. When the patient assumed the dorsal recumbent posture, the cardiac impulse could not be seen or felt, and the usual area of cardiac percussion-dulness was resonant; but when the patient, was erect, the impulse was felt and there was dulness over the lower portion of the sternum. On palpation a thrill was felt in the precordia. On auscultation, irregular, tumultuous tinkling sounds were heard, more intense with the systole. The explanation of the phenomena is that, in the first attack, pneumothorax resulted. In consequence of pleuro-pericardial adhesions that existed, the heart was, with the lungs, displaced backward. In the second attack, pneumopericardium developed. The only assignable cause for the entrance of air into the pleura and pericardium is rupture of the adherent and delicate membranes as a result of some unusual effort.

Operative Treatment of a Cyst of the Pancreas.—Albert (*Wiener medizin. Presse*, No, 43, 1891) recently presented to the Royal Society of Physicians of Vienna a man upon whom seventeen months previously he had operated for a tumor of the pancreas. Clinically, there was a tumor, as large as the uterus at the end of pregnancy, situated in the epigastrium and sending a process into the pelvis, the percussion-dulness of which posteriorly was indistinguishable from that of the liver and which was taken for an echinococcus of the liver. As, however, the stomach could be detected anteriorly to the tumor, a diagnosis of tumor of the pancreas was made and operation advised. When the abdomen was opened by a median incision and the transverse fascia divided, no translucent membrane was found; so that to enter the free peritoneal cavity, a second incision was made in the right hypogastric region, the tumor reached and punctured. After the cyst was evacuated, it was drawn forward, and a portion that appeared to protrude from the foramen of Winslow was removed. It did not seem advisable to remove the entire tumor, on account of the high mortality (50 per cent.) of such operations. For some time after the operation, a saccharifying and peptonizing fluid was discharged through the wound, progressively diminishing in quantity. The case was the third of tumor of the pancreas operated on by Albert.

Scleroderma.—From clinical observations in three cases and a post-mortem study of one, Dinkler *Deutsches Archiv für klin. Med.*, Bd. xlviii., H. 5 u. 6) maintains that scleroderma is a disease *sui generis*, characterized at the outset by firm swelling and at a late stage by cicatricial-like atrophy of the cutis. The swelling is frequently preceded by vasomotor disturbances. Pigmentation and desquamation may take place, but are not distinctive. Scleroderma may be diffused or circumscribed. The disease process is not restricted to the skin; it may appear in the brain and in striated muscular tissue. The etiology of the disease is obscure; the affection may appear spontaneously or it may follow acute or chronic injuries. It is anatomically characterized by hyperplasia of the connective tissue and by vascular changes. The disease of the vessels involves only individual arterial branches and corresponds to periarteritis, mesarteritis and endarteritis. Clinical observation and anatomical investigation render it probable that the disease is dependent upon an inflammatory process especially involving a varying arterial distribution. The prognosis is dubious. Treatment must be constitutional, conjoined with the application of the constant current and warm baths.

Death from Pyemia as a Result of the Sting of a Fly.—Paltauf (*Wiener klin. Wochenschr.*, No. 35, 1891) has recorded the case of a woman, thirty years old, who was stung on the right eyelid by a fly. On the following day there were considerable swelling, redness and pain in the right temporal region, with fever, and to these were added cerebral symptoms. On the second day manifestations of collapse appeared, with heart-failure; death ensued on the morning of the third day, little more than forty-eight hours after the fly-sting.

At the autopsy, in addition to the conditions observed during life, there were found multiple phlebitic thrombi and abscesses in the texture of the right temporal muscle, thrombi in a radicle of the cavernous sinus and in the sinus itself, an excess of fluid in the pleural cavities, and multiple, softening, hemorrhagic and purulent thrombi in the lungs. There were also parenchymatous swelling of the kidneys and liver and acute enlargement and softening of the spleen. The pus of the phlebitic abscesses in the temporal muscle, of the pulmonary infarcts and incipient abscesses, and the fluid of the spleen contained many cocci, which on culture proved to be principally staphylococci aurei together with staphylococci albi.

Purified Tuberculin.—Koch (*Deutsche medicin. Wochenschr.*, October 22, 1891) has announced the results of investigations conducted in an endeavor to isolate the active principle of tuberculin. By treating the crude product with absolute alcohol, and then with 60 per cent. alcohol, and finally drying, he was able to obtain a light-gray powder representing about one-half of the active principle. From the large proportion of ash to which it gives rise, and from its variability of reaction to numerous tests, the product is thought not to be an absolutely pure one. It is readily soluble in water and feebly soluble in alcohol. Preserved in glycerin, it retains its activity for months From its chemical reactions purified tuberculin is considered to belong to the group of albumins. It differs from the albumoses, which it most closely resembles, and from the toxalbumins, in its resistance to high temperatures. It differs from the peptones in that it is precipitated by iron acetate. It is possible that it may belong to a distinct group of albumins that includes also the products of other pathogenic bacteria. The physiological effects of the purified product, as observed in guinea-pigs and in man, are identical with those of crude tuberculin.

Actinomycosis of the Peritoneum, with Recovery after Operative Treatment.—Kern (*Corresp.-bl. für Schweizer Aerzte*, September 15, 1891) reports the case of a gardener, twenty years old, who had an attack of typhlitis,

which moderated under rest in bed, liquid diet, and the application of ice-bags and cold in other forms; but it was six months before material improvement set in, dull pain in the right iliac fossa, however, persisting. As time wore on, diarrhea developed, a sense of induration in the lower half of the right side of the abdomen became perceptible, and progressive emaciation appeared. Subsequently multiple fistulæ formed in the anterior abdominal wall, giving vent to fetid, yellowish pus, containing numerous grayish-green granules, as large as pin-heads, which, on examination, proved to be actinomyces-masses. Irrigation with saline solutions and with iodoform emulsion proving futile, the various sinuses were laid open, all suspicious surfaces curetted, and the thermo-cautery applied. Ultimately complete recovery ensued. Examination of the contents of several carious teeth that the patient possessed had yielded negative results.

Congenital Muscular Wry-neck.—PETERSON (*Zeitschr. f. Orthopäd. Chirurg.* (i, 1, 1891), from a study of the subject of congenital, muscular wry-neck, has arrived at the conclusion that there is no evidence that wry-neck has ever developed from rupture of a normal flexor or extensor of the head during birth. Clinical experience in the sequelæ of tears of muscles, as well as the negative evidence of experiments in animals, is against such an etiological relationship; while the occurrence of intra-uterine shortening of a flexor or extensor of the head has been demonstrated. Clinical observation and experiments in animals have shown that permanent approximation of the points of origin and insertion of a growing muscle is followed by shortening. The intra-uterine development, the preponderant involvement of the right side, as well as the frequent occurrence of wry-neck in cases of pelvic presentation and of difficult labor, are readily explicable by an abnormal condition of the amnion, and require no further explanation. Stromeyer's dictum of the traumatic origin of wry-neck has not been sustained. The accoucheur cannot be held responsible in any case of congenital wry-neck.

Extirpation of the Gall-bladder, with the Establishment of a Communication between the Duodenum and the Common Choledoch Duct.—In operating upon a woman forty years old, with calcular obstruction of the cystic duct, SPRENGEL (*Deutsche medicin. Wochenschr.*, Sept. 3, *1891*) mistook the cystic duct for the common duct, and the common duct for the intestine. By expression the calculus was forced from the cystic into the common duct, and it was thought that the biliary passages were free. The symptons continuing, however, the abdomen was again opened, and two calculi were found, one in the cystic duct, and the other at the transverse fissure of the liver. On account of the former the gall-bladder was removed, and the cystic duct was ligated; the second calculus was crushed. To overcome the obstruction in the common duct an artificial communication was established with the duodedum. Three months later the patient had recovered, and was free from symptoms.

The Diuretic Action of Fresh Thyroid Juice.—In a case of myxedema, FENWICK (*British Medical Journal*, October 10, 1891), in the course of grafting the thyroid gland of a sheep, split the gland and, before placing it in position, rubbed into the subcutaneous tissue some of the glairy secretion that oozed from the cut surface. On the following day, the temperature of the patient had risen from its habitual subnormal level to the normal, and the quantity of urine had increased from twenty to fifty ounces per day. In a second case of myxedema, thyroid juice was injected hypodermatically, with similar results. In healthy persons no such results were observed.

Fenwick expresses the view that the current theory of the action of the diseased thyroid gland is incorrect and that the condition of myxedema is dependent upon a perversion of the renal function.

Cirsoid Aneurism of the Foot.—At a meeting of the Royal Society of Physicians of Vienna, BILLROTH (*Wiener medizin. Presse*, No. 43, 1891) presented a corrosion preparation made from the amputated left foot of an hysterical woman, fifty years old, who had complained of pain in the member. The foot was edematous. On deep palpation over the malleoli, decided pulsation could be detected, and on auscultation an aneurismal bruit was to be heard. By firm pressure, defects in the fibula were recognized; on removal of the pressure, pulsation became perceptible. A diagnosis of pulsating sarcoma in the bone was made and the foot was amputated. The corrosion preparation showed, however, that both malleoli were occupied by convoluted plexuses of blood-vessels surrounded by masses of round cells. In the course of a short time similar manifestations appeared upon the right foot, so that a revised diagnosis of cirsoid aneurism was made.

Subcutaneous Injections of Cocaine in Trigeminal Neuralgia.—MALHERBE (*Gaz. méd. de Nantes*, No. 11, 1891) has reported two cases of obstinate trigeminal neuralgia that, having resisted the ordinary means of treatment, finally yielded to subcutaneous injections of a third of a grain of cocaine hydrochlorate. The injections were made at the point of the greatest pain, at first twice a week, then, as the intervals between the paroxysms were prolonged, every ten days and more. One of the cases was in a woman, seventy years old, who for nineteen years had suffered with severe neuralgia of the left mental and buccal nerves. The second case was also in a woman, fifty-four years old, who for five years had suffered with neuralgia of the right infra-orbital nerve.

The Dermatoses of Musicians.—STERN (*Münchener medicin. Wochenschr.*, October 20, 1891) has recorded cases of sycosis in violin-players that developed in the left submaxillary region as a result of the mode of supporting the instrument. In a flute-player an eczema of the chin and lips developed from the use of an instrument with a wooden mouthpiece. Under appropriate treatment the condition was remedied, and on the substitution of an ivory mouthpiece did not return. In trumpeters Dr. Stern has observed various abnormalities of the lips as a result of impact against the mouthpiece.

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THE UNTRUSTWORTHINESS OF THE LAY PRESS IN MEDICAL MATTERS.

UNLESS the writing be a verbatim quotation from a medical journal it is quite impossible for an educated physician to finish the reading of an article on a medical subject in a non-medical journal without a smile either of contempt, of amusement, or of both combined. A strange fatality seems to attend the filtration of medical facts through the lay editorial and reportorial mind. Not long since, the editor of one of the most popular and respectable magazines, with puzzling injudiciousness, allowed a professional humorist the use of his columns to prove that the quintessential nonsense and mummeries of medieval therapeutics had been extinguished solely by the power of so-called homeopathic rationalism and science. By reason of this exquisite illogicality the humor of the sketch to discriminating minds was greatly but unconsciously heightened. In a recent number of one of the best of English magazines, an author and the editor evidently thought that they were firing at the slow-going medical profession a discovery of vast importance as to the resuscitation of asphyxiated persons. What was new in the discovery was not true, and what was true was by no means new. Had we space we could adduce from recent journals of otherwise good reporting ability a score of examples of most egregious and not infrequently amusing misrepresentation. We complain, so far, of no intentional misinformation, but wish only to emphasize the fact that with the best ability and intention the result is ludicrously inaccurate and the mind of the ordinary reader is filled with half-truths and untruths that perpetuate the proverbial and frightfully inaccurate jumble of opinions as to medicine held by the ordinary individual.

If we descend from the better class of carefully edited serials to the preposterous Sunday newspaper and the outrageous advertising sheets supplied Master Demos, we are at once confronted with a farrago of unmedical travesties of medical knowledge quite beyond adequate description and worthy vilification. Here begins an ignorance that is far more than culpable and a misrepresentation that is at once venal and shameless.

Even in many of the best papers the power of the patent-medicine man, the World's Therapeutic Institute, and the advertising agent is supreme. The profitable advertisement closes the editorial mouth or opens it with a promptness that is comparable only to that of a rigid mechanism responding to a pre-ordained stimulus. The most striking exemplification of this has lately occurred. From one boundary of the United States to all the others almost every newspaper of this broad democratic land has been repeating as news and howling as editorial judgment the echoings of a certain hired advertiser's agent of the patent-medicine fraternity, denouncing and abusing the poor druggist who should dare to offer his customer any preparation other than the "patented" cure-all the poor over-advertised dupe of a customer had asked for. The "substitution evil" has been cursed and spat upon with all the wrath of all the money of all the patent-medicine syndicates of all the Americas. What are the facts? A set of sharpers compound some secret mixture, good or bad, of drugs and syrups, and relying upon the gullibility of people, purchase the press with an odd hundred thousand dollars' worth of advertisements, in order to reap millions. The booby dupe calls at the drug-store for the cure-all. The druggist cannot make a cent on the patented and advertised article, so completely has the advertiser got him in his grip. But the druggist knows the ingredients of the mixture, and knows the advertised article is sold at an enormous profit to the advertiser. He is equal to the emergency and mixes

his own unpatented medicine, truthfully guaranteeing it in every way as good as that of the patentee, and with a fair profit to himself he can sell it at half the price of the advertised and patented article. In a commercial sense he is doing perfectly right, and everybody but the owner of the secret article must wish the druggist well in his hard lot in thus fighting fire with fire. But in hounding the druggist as a scoundrel the general press has shown most superbly how its opinions in medical matters are anything but useful to the community. Could a single one of these guardians of public morality be counted on to help tell the world what a disgrace to civilization the entire vile patent-medicine business is?

The query arises as to the possibility of setting this right—of the possibility of so stating medical truths that the common intelligence may be able to understand them, and of the duty and responsibility of medical men in thus moulding and clarifying the lay mind about these things. Other departments of science have their plebificators, their professional popularizers of knowledge, and in every other sphere attractive handbooks and simple expository treatises are continually multiplied, which, without distortion and mystification, put even the most unlettered *au courant* with the latest discoveries and the most abstract of scientific truths. Why is it that that which pertains most vitally to the welfare of each and every person is left untouched and the unprofessional mind allowed to grope in a gloomy twilight of fancy, prejudice, and ignorance? The continuance of this condition of the lay mind is the essential and almost sole reason that quackery, medical superstition, and medical sectarianism are of such prolific growth. Ignorance and misinformation are the manures of these sad weeds.

Among many there are three principal methods whereby the profession may counteract the malicious influences at work:

1. A persistent endeavor on the part of each of us to have modern and scientific physiology made a more prominent part of the teaching in all schools and colleges. Wherever we can, we should try to influence school boards, educators, teachers, and trustees of educational institutions, both primary and higher, to make anatomical, physiological and hygienic courses of study a necessary part of the curricula.

2. Medical men should write for the newspapers, and should compile elementary manuals that may popularize medical knowledge without mutilating and rendering it absurd or erroneous. We are well aware of the fearful danger lurking in this advice: the license thereby given the schemer to advertise his professional ability and service—a danger that in the present state of professional greed and public indiscrimination cannot be too sharply emphasized and prophesied. But it is not an inobviable danger, and its checks and preventions will, with growing intelligence and morality, be speedily found.

3. The noble and marvellously effective new method of general education, known as the University Extension system, should be seized upon and made use of by the medical profession to extend in the minds of all a correct knowledge of the body and its diseases. The instrument seems as if made to our hand. Professors in medical colleges, teachers of physiology, hygienists, even the humblest practitioners of medicine, have inexhaustible stores of correct observation and knowledge for which humanity is humbly waiting and asking, and which to it would be of inestimable value.

KOCH'S FURTHER STUDIES UPON "TUBERCULIN."

NOTWITHSTANDING the more or less adverse turn taken by the wave of public and professional sentiment concerning the experiments of KOCH upon the treatment of tuberculosis, he properly continues his work in this line, apparently oblivious of all criticism. The latest of his contributions[1] upon the nature of tuberculin, and the method for purifying it, serve to shed considerable light upon the subject.

In this publication KOCH states that tuberculin is an extract prepared from the tubercle bacillus itself.

One of the drawbacks in the preparation of tuberculin, says KOCH, has been the difficulty in obtaining a sufficient amount of material upon which to work. The method of growing the bacilli on solid media until they accumulate in amount sufficient for the extraction of their active principle required so much time that it became necessary to employ other means. KOCH finds that the bacilli can be obtained in much larger quantities by cultivating them in ordinary nutrient veal broth to which from 4 to 5 per cent. of glycerin has been added. The cultivation is to be conducted at a temperature of 38° C., and in vessels that permit of a large surface-area of fluid. When grown in this way the organisms develop very quickly in the form

[1] Deutsche med. Woch., No. 43, Oct. 22, 1891.

of pellicles that float upon the surface of the fluid, and in from six to eight weeks the culture may be said to be "ripe," *i. e.*, ready for the further steps in the process of extracting tuberculin from it. When ripe the cultures grown in this way are to be evaporated over the water-bath at a temperature of 100° C., until they are about one-tenth of their original volume. They are then filtered under pressure through filters of unglazed porcelain or silicon. The filtrate represents crude tuberculin, the form in which it has been employed since its introduction.

The advantage that this method possesses over the original plan for obtaining tuberculin is that from the same number of organisms a much larger amount of active principle can be obtained.

In the original method the bacilli were grown upon the surface of a solid medium, from which they were scraped and extracted in glycerin. In the present method of cultivation in a fluid medium the extraction goes on all the time that the organisms are growing, so that the fluid in which they are developing contains tuberculin in comparatively large quantities.

After extraction by this means the bacilli are robbed almost entirely of their active poisonous principle, the poison having been dissolved in the fluid.

The latest contribution of KOCH presents also an account of experiments made with a view of obtaining tuberculin in a pure state, for the purpose of becoming more intimately acquainted with its true nature. The impure, crude extract was subjected to a number of methods of chemical analysis before a plan was found by means of which it could be freed from coloring and extractive matters and salts, and the active agent alone obtained. Without going into the details of the various methods, it will suffice to state that by subjecting the impure extract to the action of 60 per cent. alcohol, a pure white flocculent precipitate was obtained that, when dissolved in glycerin, presented all the characteristics of the crude extract, but in a more concentrated degree.

Pure tuberculin thus obtained is in its action upon man about forty times as energetic as crude tuberculin, and for guinea-pigs about fifty times as powerful.

The action of purified tuberculin was tested by KOCH upon four of his colleagues, and in all the reactions were in general analogous to those following the use of the crude extract under the same conditions.

An interesting observation in the course of these experiments was a rise in temperature corresponding with the increase in dose. For example:

By subcutaneous injection—

2 mg.	caused a rise in temperature to	38.2° C.
3 "	"	38.7°
4 "	"	39.0°
5 "	"	39.2°

In all of these cases the condition of the individual operated upon returned to normal within about twenty-four hours after the injection.

The result of closer study of the constitution of tuberculin led to the conclusion that it belongs to the class of albumins, though it differs in its behavior with different reagents from both toxalbumins or albumoses and peptones.

According to elementary analysis pure tuberculin has the following composition (PROSKAUER):

	First analysis.	Second analysis.
Carbon . .	48.13 per cent.	47.67 per cent.
Hydrogen . .	7.06 "	7.18 "
Nitrogen . .	14.46 "	14.73 "
Sulphur . .	1.17 "	1.14 "

THE NECESSITY FOR AN ADEQUATE SYSTEM OF CATTLE-INSPECTION.

THROUGH the efforts of the Director of Public Safety and of the Board of Health of the city of Philadelphia, twenty-one dealers in cattle, butchers, and venders of meat have been arraigned and held to answer at court for selling or exposing for sale diseased cattle or unwholesome meat. The diseases from which the cattle suffered were actinomycosis and tuberculosis. The meat condemned as unwholesome was obtained from calves slaughtered when only a few days old.

Actinomycosis, as defined by ZIEGLER, is a progressive inflammatory affection, set up by a certain fungus—the actinomyces—attended with the formation of granulations and fibrous tissue, and with suppuration, attacking human beings, cattle, and swine, and communicable by inoculation. It was first described in the form in which it appears in cattle, in 1877, by BOLLINGER, and in the same year by ISRAEL as it appears in man. Since then the subject has received considerable attention at the hands of numerous writers.

The fungus enters the body through abrasions of

the mucous membrane of the mouth and pharynx, the respiratory tract and the digestive tract. In cattle the disease locates itself primarily in the jaw, and most frequently in the lower jaw.

It presents itself as a tumor resembling a sarcoma, and, from the swelling it produces, is known among cattle-dealers as "lump-jaw." Both ISRAEL and PONFICK have transmitted the infection to lower animals by inoculation from man, but no direct relationship between the disease as occurring in the lower animals and as met with in man has as yet been clearly established. While it is probable that man and the lower animals become infected from some common source, it is possible for the former to be infected by the latter. Cattle suffering from actinomycosis should unquestionably be condemned, and their carcasses destroyed. The fact that a number of cases of actinomycosis have been detected as the result of a limited search indicates that the disease is by no means uncommon.

In the course of the investigation it was further discovered that large quantities of immature veal are constantly being placed on the market. Veal only a few days old is generally watery and flabby, and is difficult of digestion. It is liable to occasion gastric irritation, and on this account should be considered unwholesome as food.

The investigation demonstrates the utter helplessness of the people without a system of vigilant inspection, and the necessity for the institution of means to afford protection against practices dangerous to the public health.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Regular Meeting, October 5, 1891.

DR. WILLIAM HUNT, PRESIDENT, IN THE CHAIR.

DR. THOMAS G. MORTON read a paper, entitled "Gunshot Wound of the Thigh; Ball Found in and Removed from the Neck of the Femur; Recovery."

James T., twenty-three years old, was shot with a revolver, the ball entering the left thigh below the groin; two unsuccessful attempts were made to find the ball. Four days later, when admitted to the Pennsylvania Hospital, the patient was able to bear weight upon the injured limb, and motion in the joint was free, showing that there was no solution of the continuity of the bone. The bullet-wound, which was two inches to the inner side of the great trochanter, was inflamed and a considerable amount of fetid pus exuded from the opening. The temperature was 101°. A probe passed in deeply at a right angle to the femur came in contact with bone.

A five-inch incision led to a deep pus-collection. The track of the bullet being opened, the neck of the femur, into which the ball had penetrated, was exposed; but there was no fracture in continuity. With chisel and gouge the track in the neck of the femur was epened to the extent of an inch or more, and the ball was found so firmly imbedded that it was with difficulty displaced and extracted. The excavated track in the bone, as well as the wound of the soft parts, was curetted and cleansed, and a rubber drain inserted.

Convalescence was uneventful, although the wound was slow in closing. The ball was conical and weighed 136 grains. (Patient exhibited.)

From an examination of the histories of cases of gunshot wounds during the Crimean war, the war of the Rebellion, and elsewhere, Dr. Morton had been unable to find any similar recorded case. Hennen, in his *Principles of Military Surgery*, London, 1829, reports, page 158, as follows: "I have seen balls lodged in almost every part of the trochanters, neck, and head of the bone, and yet the most accurate examination during life did not lead to a discovery of the situation."

DR. MORTON read a second paper, entitled "Chronic or Relapsing Appendicitis: Removal of the Appendix in an Interval between Attacks."

Jacob K., twenty-nine years old, eight months previously had an attack of severe abdominal pain lasting several days—the pain being principally in the right iliac region, with the usual symptoms indicating appendicitis. Four months later he had another attack, for which he was admitted into the Pennsylvania Hospital; in a short time was discharged, apparently quite well. A few weeks subsequently he had another attack of pain, but the symptoms were not so severe as to confine him to the house.

About a month previously he first noticed a small lump in the appendix region, on account of which he was, a few days later, admitted to the medical ward of the Pennsylvania Hospital. Temperature, pulse, and respiration were normal; there was no pain at the site of the tumor, which was apparently as large as a pigeon's egg; it was immovable, hard, and oval in shape. The appendix was judged to be enlarged and in a chronic inflamed condition, and as it was liable to become perforated at any time, on account of its retained contents, its removal was advised.

The usual operation was performed, the only difficulty experienced being hemorrhage from division of the epigastric artery. There were no evidences of recent inflammation; the appendix was enormously enlarged, dark-red in color, and so firmly bound to the cecum by old lymph-adhesions that great difficulty was experienced in detaching it from the cecum sufficiently to place a ligature beyond a large, foreign body that it contained. A glass drain was introduced, and the usual dressings were applied.

On examination, the excised appendix was found to have exceedingly thick walls; its mucous membrane was in folds and evidently ulcerated; it contained a large oval concretion resembling an ordinary uric-acid calculus.

The concretion measured an inch in length, and an

inch and a half in circumference; its distal extremity was smooth and rounded, and moulded to the shape of the distended organ; the other end was rough from irregular deposit.

DR. MORTON also read a report of a case of "Perforative Appendicitis; Removal of the Organ; Recovery."

Joseph T., twelve years old, was admitted into the medical ward of the Pennsylvania Hospital, suffering from acute appendicitis, with threatening, if not actual, perforation.

Six days previously he had freely eaten of fruits, and had considerable pain; four days later, after lifting a heavy can of water, he "felt something give way inside, and had a sharp pain." After this the symptoms became progressively worse.

On admission, he had marked local peritonitis and general abdominal pain. In the subsequent six days the symptoms in no wise improved; although there was no tumor or hardness, and the appendix region was not tympanitic, yet the local pain, the sweats, and the slight chilliness indicated pus-formation, and the appendix as the source of the trouble.

A lateral abdominal incision was made; on reaching the cecum the appendix was found glued to it; pus was not discovered until the appendix was separated, when an immense abscess was found, into which the sloughing appendix had emptied its contents; the cause of the ulceration was a large, oval, fecal concretion firmly held in the gangrenous extremity of the appendix. The abscess contained several ounces of fetid pus, and had dissected its way backward to the iliac bone. The appendix was ligated close to the cecum and removed; two drains were introduced. Convalescence occurred without interruption.

DR. T. S. K. MORTON presented another appendix, removed a few days previously, that contained a large concretion, the exact nature of which had not yet been determined. He added that so much has been said about cherry-stones, orange-seeds, and similar bodies forming the nuclei of concretions found in the appendix, that in every case it should be clearly demonstrated that the formation is either a true foreign body or else a fecal concretion.

The appendix demonstrated was removed from a man who had had relapsing attacks during a period of six years, completely undermining his health. He presented the manifestations of acute septicemia, with all the signs of violent appendix trouble. The operation was promptly performed. The appendix was found gangrenous, and the foreign body was discovered. The appendix was removed, and the abscess-cavity washed out and packed with gauze. In the subsequent ten days there was no symptom of any trouble; the man remained perfectly comfortable.

Among the curious bodies that have been found in cases of appendicitis, Dr. Morton mentioned a lumbricoid worm, which was found in a perityphlitic abscess without apparent perforation of the appendix or cecum. It must have escaped from the appendix at some time, the perforation afterward closing.

DR. T. G. MORTON added that in a recent case of perforative appendicitis, a globule of solder, supposed to have been taken with some canned tomatoes, and which had evidently caused the perforation, was found in the abscess-cavity.

DR. JOHN B. ROBERTS stated that Dr. Owens, of Chicago, had related to him a case in which a gelatin capsule was found in the appendix.

DR. O. H. ALLIS made some extemporaneous remarks, in which he endeavored to illustrate a point in the management of cases of supra-pubic operation. In such cases soiling of the clothing by the discharges is sometimes exceedingly annoying! Dr. Allis reported the history of a case in which a year previously he had cut for stone. He performed the lateral operation, and found a soft stone of considerable size. The opening closed immediately, so that it was necessary to draw off the water three hours after the operation; no water ever passed through the wound. The patient remained remarkably free from trouble for about six months; then he began to suffer with irritation of the bladder as before, and he again suspected the presence of stone. The searcher failed to detect a calculus, the examination occasioning a good deal of pain. Dr. Allis then determined to perform the supra-pubic operation; this was done about a year after the first operation. Some small pieces of stone were found in the bladder behind a large prostate. These were removed, and the patient did well after the operation, but a strong odor of urine emanated from the clothing of the patient. After shaving the hair about the opening, Dr. Allis washed the skin with chloroform, then smeared a small amount of liquid-rubber cement over the skin around the opening, and finally stretched a piece of rubber dam over this. The rubber was kept in close contact with the skin for a few minutes, when it adhered perfectly and remained adherent for two or three days. The edges of the dam were then folded up over a piece of absorbent cotton, and in this way the man was kept perfectly free from soiling. In this case it was desired to have the opening remain; the bladder was washed out, the patient assuming a position on the hands and knees, so that the enlarged prostate would not interfere with the discharge of fluid. In this way, during the first month a number of portions of stone, some of considerable size, were washed out. The man has since gotten out some pieces himself. This same application might be of service in cases of breast-surgery in which the patients are much annoyed by the soiling of the clothing.

DR. ALLIS made some further remarks on "Digital Removal of the Entire Prostate." He related a case of enlargement of the prostate in which he performed a supra-pubic operation, removing the entire gland. The patient recovered from the operation, and died about six weeks later from some pulmonary or cardiac complication. After making the supra-pubic opening, Dr. Allis cut through the mucous membrane over the prostate with his finger-nail, and then carried his finger down between the gland and the mucous membrane, dissecting this out in two portions. The masses removed were exceedingly large, and there was very little hemorrhage. The specimen revealed no remains of the prostate gland. The physician who had attended the patient had used the catheter, which would sometimes pass readily into the bladder, and sometimes not. On passing his finger down to the prostate, Dr. Allis found what appeared to be an opening through which a catheter passed, enter-

ing a canal at the base of the gland and emerging at its posterior portion. The catheter could be felt by passing the finger in the opening in the upper part of the gland. The structure of the gland was densely fibrous, and to a certain extent it was lobulated.

Dr. Allis further related that he had performed four supra-pubic operations in each of which there was a certain amount of gangrenous condition about the opening, which subsequently granulated satisfactorily. In every instance the wound was packed from the bottom, with capillary drainage from the first.

DR. T. G. MORTON stated that he had seen cellular sloughs after supra-pubic operations, but not the condition referred to by Dr. Allis.

DR. W. W. KEEN stated that the method described was a very ingenious and a very useful one, and should be widely known. It is by far the best method that he knew of for the control of the annoyance from discharges. It, however, has a wider application than simply in supra-pubic operations. It can be used in any operation in which there is discharge of fluid.

DR. W. JOSEPH HEARN reported a case of hytadid cyst in a man, forty-two years old, a shoemaker, a native of Hungary, who had been in the United States a year. Five months before presenting himself the man had observed a nodule, about as large as a marble, in the right buttock. The mass was painful on pressure and seemed to elude the grasp. It grew with considerable rapidity. On examination a large swelling about as large as three oranges was found on the left lateral aspect of the buttock; on palpation an indistinct crepitus was elicited; there was a sensation as of fluid beneath the deep fascia. The site of the greatest fluctuation changed from time to time in the course of the examination. The skin was not edematous or discolored. The man felt a sense of tension over the femur, great pain on motion, and tenderness on pressure. He gave a history of digestive troubles, was sallow, persistently constipated, and had a coated tongue. Under the belief that there was an abscess the man was etherized, and an incision was made in the buttock. Beneath the gluteal muscles a cyst was opened and a large quantity of serum, together with detritus and daughter-cysts, evacuated. The original incision was enlarged, the cavity curetted, washed out with a solution of corrosive sublimate, and drainage-tubes inserted. For two weeks the wound was irrigated daily with a solution of corrosive sublimate, considerable masses of the cyst-wall being discharged at each washing. Three weeks after the operation there were no evidences of disease remaining.

This case of hydatid cyst of the buttock presents many elements of interest. In the first place a mistake in diagnosis seems to have been anticipated by so distinguished a man as Sir Thomas Watson, who states that the diagnosis is usually made by operating on an abscess and finding an hydatid cyst. In the second place a curative result was obtained by simple incision and antiseptic irrigation, a proof that it is not necessary to remove the cyst-wall.

The next point of interest is the possible source of the disease. It is universally recognized that hydatids are the product of the ova of the tenia echinococcus, the dog usually being the host of the adult worm. The ova find their way with the food or drinking-water into the stomach of man, where they lose their covering and are set free to pursue their wanderings until they find a place of permanent abode.

The patient in question did not keep a dog nor was he accustomed to eating pork or raw beef; but he was exceedingly fond of salad, eating it in large quantities, without taking the trouble to wash it. Bartholow some years ago observed that lettuce is liable to become contaminated with the excrement of the dog, and thus capable of giving rise to hydatid disease. Hydatid cysts are common in Iceland, but rare in the United States.

DR. HEARN also reported a case of "Nephro-lithotomy." The patient, a male, twenty-nine years old, had an attack of "gravel" at ten years of age, but had no further trouble until two years before he came under observation, when he had a severe attack of pain in the region of the right kidney—so severe as to confine him to bed and require the hypodermatic employment of morphine. Following this, he had four or five severe attacks, passing some blood with the urine in each attack. The pain would come and go very suddenly. There was intense pain on pressure both in front and behind the kidney. The man was unable to work, and an exploratory incision was made one inch below the rib, the capsule of the kidney being opened with a knife. On opening the kidney with the finger and enlarging the opening with the knife, a stone was distinctly felt. The stone was so adherent that it was almost impossible to remove it. During the operation the patient lost a large amount of blood. Had it been anticipated that the stone was so firmly lodged, special provision could have been made and the operation need not have been so prolonged. The hemorrhage was so severe that it was thought it would be necessary to remove the kidney. The shock following the operation was most profound; but, as is peculiar in these cases, however profound the shock, it is remarkable how quickly the patient recovers. The man recovered nicely, and in four weeks left the hospital perfectly cured. As soon as the stone was removed the wound was packed with iodoform gauze, and the bleeding at once ceased. After the operation the man passed bloody urine—an evidence that the ureter was patulous. The stone weighed 140 grains.

DR. HEARN reported yet two cases of vesical calculus. One patient, L. B., fifty years old, for eight or ten years had been complaining of aggravated cystitis. Examination disclosed the presence of a stone imbedded in the folds of the mucous membrane. Because the stone was so large the supra-pubic operation was performed. It was not possible to distend the bladder; it would not hold an ounce of water. The stone was apparently adherent to the bladder, and was dislodged with difficulty. The incision was one and a half inches in length. The man did well. There was no sloughing at all, and he went home in two months. Dr. Hearn stated that, if he again should find it necessary to make so large an opening in the bladder, he would suture it, with the exception of an opening large enough to admit a catheter. The procedure would promote recovery. The stone weighed 970 grains.

The second patient was a colored man, sixty-eight years old, who had for four years complained of pain in the supra-pubic region. With this there were frequent

micturition and the usual symptoms of stone in the bladder. When the sound was passed, it seemed as though there was one large stone. A short supra-pubic incision was made, and a small stone removed. It became evident that there were several stones present. In all, five were removed. Their combined weight was 243 grains. The man left the hospital perfectly well ten days after the operation, a demonstration of the advantage of a small incision into the bladder. Dr. Hearn stated that he had been opposed to the supra-pubic method, but he was much gratified at his experience with it. He considered the operation easy of performance.

In the discussion, DR. JOHN B. DEAVER stated that in a case operated upon by him a persistent fistula followed nephro-lithotomy, so that it became necessary to perform lumbar nephrectomy. Both operations were successful—complete recovery ensuing. The question that arose was whether the fistula communicated with the kidney or with the ureter. At the second operation the kidney was found intact, the site of the incision having granulated and the contour of the organ having been restored. The fistula communicated with the ureter immediately below the pelvis. The ureter was probably injured during the primary operation. Dr. Deaver added that he had performed nephro-lithotomy in two other cases, both of which recovered without any trouble. He did not agree with Dr. Hearn with reference to shock. In neither case was there any considerable shock. Not much blood was lost, which would have an important bearing upon the degree of shock.

Dr. Deaver thought that Dr. Hearn's method of proceeding in extracting the stone was much better than that which he had adopted, and that which is generally adopted—namely, tearing into the kidney with the finger or grooved director. It is probable that if, in the case especially referred to, a free incision had been made and the stone removed, there would have been less likelihood of a fistula following.

Dr. Deaver related that a short time previously he had operated upon a man, seventy-five years old, who had a piece of catheter in his bladder. The man had for some years been in the habit of passing a rubber catheter, and, the instrument becoming brittle, a piece had broken off in the bladder. The catheter was removed through a supra-pubic opening; this was followed by a good deal of sloughing, which, in an old man in whom the vitality of the tissues is low, may readily occur.

Another question that arises in these cases of long-standing obstruction, with damming of the urine back upon the kidneys, is whether ether or chloroform is the safer anesthetic. Dr. Deaver believes that, under such circumstances, chloroform is the safer. He had recently operated on a man, seventy years of age, who was daily passing but nine ounces of urine, which contained an abundance of granular casts. In this case he administered chloroform, and no bad symptoms followed. The patient is now passing twenty ounces of urine daily. Dr. Deaver stated that, in his experience with supra-pubic cystotomy for drainage in case of large prostates in men advanced in life, those who die die from a slow form of uremia. That ether may cause congestion of the kidneys was clearly demonstrated a short time before in a case of radical cure for hernia in a young man in whom the urine was perfectly normal. For some hours after the operation the man passed bloody urine and presented the symptoms of congestion of the kidney. If the normal kidney will thus suffer from the effects of ether, the abnormal kidney will probably suffer still more.

The PRESIDENT stated that a number of years ago he had written a short paper entitled "Are the Kidneys Active Eliminators of Ether?" Since that time he has on several occasions had the opportunity of applying a flame to the urine passed by patients undergoing etherization, with the production of a flash of burning ether. That ether thus passes off by the kidneys is a great element of safety in these cases. When there are evidences of renal disease, it may perhaps be safer to give chloroform.

Whether the kidneys eliminate chloroform also Dr. HUNT did not know, but the quantity at best must be very small. The case that first attracted his attention to the subject was a patient brought into the Pennsylvania Hospital with a recent accident-wound necessitating amputation of the arm. Ether was administered, but the pulse almost stopped; the etherization was discontinued, and the operation was postponed. In the afternoon the etherization was resumed, but the same effects occurred. Then the operation was performed without etherization. The patient presented the ordinary symptoms of what is called surgical fever. The urine was albuminous. The man died, and at the autopsy the kidneys were found absolutely disorganized by old disease. From this association Dr. Hunt was led to believe that probably the kidneys serve to eliminate the excess of ether and thus save patients from the injurious effects of the anesthetic.

DR. J. EWING MEARS stated that another point in connection with the administration of ether to elderly persons as well as to children that should be considered is the tendency of ether to induce irritation of the bronchial mucous membrane.

DR. L. W. STEINBACH stated that in his experience renal calculi are usually branched in outline, conforming to that of the calices of the kidney, and thus occasioning great difficulties in removal. Some three years ago, in a case upon which he operated by abdominal section, he found the difficulties in the removal of the stone insurmountable and was compelled to remove the entire kidney. There were several stones, and most of them were branched. He did not remember ever seeing a round stone come from the kidney.

In concluding, DR. JOSEPH HEARN added that he had seen two cases of exploratory incision into the kidney, without great loss of blood, in which the shock was profound, although the patient rapidly rallied.

It has long been recognized that ether is not safe when the kidneys are in such a condition that the anesthetic is not rapidly eliminated. In many cases of death occurring within twenty hours after operation ether has probably been the cause of the fatal result. Dr. Hearn expressed a preference for chloroform, and stated that he administered it often in private practice. It can be given safely, and is to be preferred whenever the kidneys are not in good condition. It is remarkable that more deaths do not occur in urgent cases in which there has not been time to examine the urine.

CORRESPONDENCE.

ROME.

Fourth Italian Congress of Internal Medicine.

THE fourth annual meeting of the Italian Society of Internal Medicine was opened in the "Aula Magna" of the University on October 19th, and continued four days. Some two hundred physicians were present, and although the attendance was smaller than was expected, it made up in quality what it lacked in quantity, for the ablest clinicians and physicians in Italy took part in the Congress.

The number of papers read was so large that it would take too much space to mention all; hence I shall only speak of the reports handed in and read by the members appointed last year.

The proceedings were opened by an eloquent and effective address by the President, Professor Baccelli, which was followed by the reports of Professors Rossoni and Forlanini on the "Pathology and Treatment of the Diseases of the Stomach." Professor Rossoni's report may be summed up as follows:

1st. The modern studies as to the quantitative variations of free HCl in the gastric juice in the various diseases of the stomach have not given decisive results in aiding the diagnosis of the diseases of the stomach.

2d. The conclusions reached by Hayem and Winter in their studies on gastric chemistry are premature. The creation of various "chemical" types of dyspepsia cannot have the importance that some have ascribed to it.

3d. The tendency manifested by the modern French authors to regard the various disturbances of gastric chemistry as morbid entities adds complications to practical medicine.

4th. Despite the progress in modern chemical and functional analysis of the stomach that has been made, the problem of the nature of dyspepsia has not yet been solved.

5th. It has not yet been satisfactorily demonstrated whether dyspeptic phenomena are dependent on chronic gastric catarrh or on gastric neuroses.

6th. The prevalent fashion of determining the chemical type of the dyspepsia leads to neglect of the study of the primary cause to which the dyspepsia is due.

7th. The classifications of gastric neuroses as found in modern works on the diseases of the stomach are useless.

8th. The gastric neuroses had better be described in treatises on diseases of the nervous system.

9th. Bouchard's doctrine of dilatation of the stomach is not clear, and neglects important researches as to the causation of gastric dilatation.

10th. The greatest advance in the treatment of the diseases of the stomach that has been made since the adoption of gastric "lavage" has been the surgical treatment of such grave organic diseases as carcinoma, round ulcers, stenosis of the orifices, especially of the pylorus, and gastric perforation. The results thus far obtained are extremely encouraging.

11th. The intervention of surgical skill in the treatment of organic lesions of the stomach imposes all the more strongly on the physician the duty (1) to make an early and accurate diagnosis; (2) to acquire himself skill enough to perform the various operations required.

12th. The new method of Marino and Sutto for the determination of free and combined HCl in the gastric juice is an excellent substitute for the method of Hayem and Winter as regards simplicity, exactness, and the time necessary to make an accurate analysis.

Professor Forlanini, who followed Rossoni, spoke at length of the chemistry and chemical analysis of the stomach and its contents, with its variations in the different forms of disease.

A prolonged and lively discussion followed these papers.

On the second day the proceedings were opened by the reports of Professors Albertoni and Silvia on "Auto-intoxications." Professor Albertoni's paper was too long to be done justice by a brief *rèsumè*, but Professor Silvia's paper, while not so comprehensive, presents the substance of the subject in such a way as to allow of the following conclusions being drawn:

1st. The healthy organism, like the diseased one, is a continuous manufacturer of poisons, as is demonstrated by the toxic nature of human excretions.

2d. The human organism does not suffer from the presence of these poisons while the eliminative organs perform their functions in a physiological manner, or else when a sufficient quantity of oxygen is present to transform the toxic substances into innocuous products.

3d. Auto-intoxication causes those morbid phenomena due to poisons produced by the organism itself, as a result of its functional activity.

4th. The causes of auto-intoxication may be deficiency or excess of function.

5th. Among the principal conditions due to auto-intoxication are those produced by alterations in the functions of the gastro-intestinal tract—hence many nervous disturbances associated with certain forms of dyspepsia, certain gastric fevers, cases of tetanus and of cramps sometimes accompanying dilatation of the stomach.

6th. Asthma, cases of transient epileptiform paralysis, and cases of neuritis may also be developed by auto-intoxication.

7th. Neurasthenia may sometimes, but not always, be attributed to it.

8th. Diabetic, carcinomatous, and gastric coma are also due to auto-intoxication. In gastric coma the poison is generated in the gastro-intestinal canal, while in diabetic and carcinomatous coma, as in pernicious anemia, it is probably generated in the intimate structure of the tissues.

9th. None of the bodies studied until now can properly be said exclusively to give rise to auto-intoxication: neither acetone nor acetacetic acid; the theory of acid-poisoning in diabetic coma cannot be accepted.

10th. Among the substances that may cause auto-intoxication are peptoxine, organic bases (ptomaïnes and leucomaïnes); products of the aromatic series, such as indol, phenol, aromatic acids, etc.; lactic acid, ammonia, sulphuretted hydrogen, acetone, etc.

11th. Fatigue, excessive mental work, insolation, and starvation cause auto-intoxication by the exaggerated and abnormal formation of some of the products named,

which cannot be rapidly enough eliminated or transformed.

12th. The diagnosis of auto-intoxication depends principally upon the demonstration of the presence in the urine, feces, sweat, and in the tissues, of substances recognized as toxic.. From this point of view we have acquired positive and important means of diagnosis by testing the urine for sulphuric acid, phenol, indican, acetone, ammonia, diamine, the alkaloids, and peptones.

13th. The treatment of the phenomena of auto-intoxication, in addition to prophylaxis, calls for two things: 1st, the transformation of noxious into harmless products; 2d, the elimination and neutralization of these noxious products.

14th. The first is accomplished by the inhalation of oxygen or compressed air; the second, as the case may be, by emetics, purgatives, diaphoretics, massage, or disinfection of the gastro-intestinal canal. In some cases alkaline remedies are found useful.

The discussion that followed the reading of these papers, in which the foremost Italian clinicians took part, was of extreme interest, but would make this report entirely too long. Those interested in the papers and discussion in full can obtain the *Transactions*, which will be issued in about two months.

In the afternoon session of the second day some twenty short communications were presented. On the third day the reports of Professors Patella and Mya on "Jaundice" were read. Professor Patella proposed the following conclusions:

1st. Neither the "hemafecal icterus" of Gubler, the "urobilin icterus" of Gerhardt, nor the "bilirubin icterus" of Tessier can be sustained.

2d. Hematogenous icterus does not exist.

3d. Nearly all the forms of jaundice seen clinically come under the hepatogenous form by resorption.

4th. The mechanism of the production of some forms of icterus is very obscure—that is, the reasons *why* and *where* this biliary resorption takes place.

5th. The physio-pathological conception of so-called catarrhal icterus, as maintained in the past, is no longer sufficient to explain the actual mechanism of its production.

6th. The actual state of our knowledge of the bacteria of the intestinal canal and biliary passages does not authorize us to accept without reserve the infective origin of catarrhal icterus.

7th. Chauffard's idea of its toxic origin—modified in accordance with the results of biologic chemistry and experimental studies on icterus—must be taken into serious consideration in catarrhal icterus, and especially in certain cases of infective jaundice.

8th. Catarrhal icterus can be considered the first link of a chain which, starting from it, reaches to grave and lethal icterus. A plural etiology—a true multiplicity of pathogenic possibilities—must nowadays be given to infective jaundice.

9th. The "morbus Weil," though belonging to this group on account of its clinical aspects, even in the absence of bacteriological or pathological demonstrations, merits, however, a special place, as etiologically specific. Is it bacteric or toxic?

10th. Our present knowledge of biliary infection is incomplete and imperfect.

A large number of papers were read during the afternoon session, with some heated discussions.

On the fourth day a few papers were read, and the President, Professor Baccelli, delivered an able address, in which he pointed out the growing importance and influence of these meetings, and closed by inviting all the members to accompany him on the following day on a visit to the "Policlinico," which is now being built.

A special meeting for the election of officers was held, at which the existing incumbents were all reëlected.

The General Council announced the following subjects to be reported upon at the next meeting, to be held in October, 1892: "Rheumatism," "Cerebral Localization," and "Aëro-therapeutics."

A PLEA FOR HIGHER MEDICAL EDUCATION.

To the Editor of The Medical News,

Sir: The following memorandum was sent with a patient by her attending physician to the resident physician of —— Hospital. I enclose the original for your instruction and delight.

Very truly yours, M. G. H.

— — — — New Jersey.
Co. ss.

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T,o, to, The head Doctor C—— Hospital, ——City, New, Jersey Feb, 2the 18,89, Mrs, H——, The wife of. Mr. H——, was born, In Mount.Gomry Co. Pa. The D, of. Mr, W——, C——, of. The said, County visited Mrs. S——, a——, H——, sycamore St.

{ Symptoms, Consumpitions,

Debility of. The LungS. Nervous, fever and A. Peculiar. dispositions of. The FluidS.

Secretions, of. The Kidneys &obstructionS of. a, tumor, Near, the Woumb,

—— —— —— ——

Registered alsow. In Camden Co New Jersey { A. Registered and Prescribing and, Compounding Physician.

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NEWS ITEMS.

Dr. John H. Packard, of Philadelphia, has entirely recovered from a recent attack of severe illness, and is enabled to resume the duties of his practice.

Books and Pamphlets Received.

Four Operations for Appendicitis: Three Recoveries; One Death from a Very Small Concealed Abscess. By W. W. Keen, M.D.. Reprint, 1891.

The Climate of Southern California in Relation to Disease. By William A. Edwards, M.D. Reprint, 1891.

A New Method of Tenotomy. By W. W. Keen, M. D. Reprint, 1891.

A Further Communication on a New Method of Compressing the Subclavian Artery. By W. W. Keen, M.D. Reprint, 1891.

A Case of Fracture of, and Dislocation between, the Tenth and Eleventh Dorsal Vertebræ, with Presentation of the Patient. By Alfred I. Bouffleur, B.S., M.D. Reprint, 1891.

The Operative Treatment of Appendicitis. By Thomas S. K. Morton, M.D. Reprint, 1891.

Trap Siphonage and Trap-seal Protection. By James M. Denton, M.E. Reprint, 1891.

Manual of Physical Diagnosis: for the Use of Students and Physicians. By James Tyson, M.D. Philadelphia: P. Blakiston, Son & Co., 1891.

Bald Heads. By Albert E. Carrier, M.D. Reprint, 1891.

A Clinical Report of Operative Surgery, in the Service of William T. Bull, M. D. By William B. Coley, M.D. Reprint, 1891.

A Treatise on Practical Anatomy, for Students of Anatomy and Surgery. By Henry C. Boenning, M.D. Illustrated. Philadelphia and London: F. A. Davis, 1891.

Records of the Association of Acting Assistant Surgeons of the United States Army. Edited by W. Thornton Parker, M.D., Recorder A. A. A. S. Salem, Mass.: Salem Press Publishing and Printing Co., 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 10 TO NOVEMBER 16, 1891.

HALL, WILLIAM R., *Captain and Assistant Surgeon.*—Relieved from Fort Schuyler, N. Y., and assigned to duty at Angel Island, Cal.

CLENDENIN, PAUL, *Assistant Surgeon.*—Promoted November 5, 1891, to be Assistant Surgeon with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1874.

FISHER, HENRY C., *First Lieutenant and Assistant Surgeon* (recently appointed).—Ordered to Fort Riley, Kansas, for duty.

SHAW, HENRY A., *First Lieutenant and Assistant Surgeon* (recently appointed).—Ordered to Fort McKinney, Wyoming, for duty.

DUNLOP, SAMUEL R., *First Lieutenant and Assistant Surgeon* (recently appointed).—Ordered to Fort Sill, Oklahoma Territory, for duty.

KIEFFER, CHARLES F., *First Lieutenant and Assistant Surgeon* (recently appointed).—Is assigned to duty at Fort Sheridan, Illinois.

MERRIWETHER, FRANK T., *First Lieutenant and Assistant Surgeon* (recently appointed).—Is assigned to duty at Fort Adams, Rhode Island.

TEN EYCK, BENJAMIN L., *Assistant Surgeon.*—Is granted leave of absence for one month, to take effect about the 15th inst.

MEARNS, EDGAR A., *Captain and Assistant Surgeon*—Is relieved from duty at Fort Snelling, Minnesota, and assigned to duty at Fort Mackinac, Michigan,

WILLCOX, CHARLES, *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Bowie, Arizona Territory, and assigned to duty at Fort Gaston, California.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 14, 1891.

GATEWOOD, J. D., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Despatch," and granted two months' leave of absence.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING NOVEMBER 7, 1891.

VANSANT, JOHN, *Surgeon.*—To proceed to New Orleans, La., as Inspector, November 7, 1891.

MURRAY, R. R., *Surgeon.*—To rejoin station at Key West, Fla., October 30, 1891.

PECKHAM, C. T., *Passed Assistant Surgeon.*—To proceed to Memphis, Tenn., as Inspector, November 7, 1891.

GUITÉRAS, G. M., *Assistant Surgeon.*—To assume command of Gulf Quarantine Station, October 30, 1891.

DECKER, C. E., *Assistant Surgeon.*—Assigned to duty at San Francisco, Cal., October 30, 1891.

APPOINTMENT.

DECKER, CHARLES E, of Michigan.—Commissioned as Assistant Surgeon, by the President, October 27, 1891.

TO CONTRIBUTORS AND CORRESPONDENTS OF THE MEDICAL NEWS.

THE MEDICAL NEWS begs its contributors and correspondents to observe the following:

1. Contributors of original articles, lectures, clinical memoranda or hospital notes, will, upon publication of their communications, be liberally paid, either

a. In cash, or

b. In reprints (250).

It should be distinctly stated, either at the head of the communication or in the accompanying letter, which method is preferred.

2. Copies or abstracts of papers must not have been or must not in the future be furnished any other journal, or published elsewhere, unless the fact have been clearly stated prior to the acceptance by us of the article. *Without an understanding to the contrary, it is held to be a matter of simple honesty that communications sent* THE NEWS *are for its exclusive use.*

3. The rejection of a manuscript does not necessarily imply any adverse editorial judgment as to its literary or scientific value. There are many other reasons that often prevent the acceptance of a manuscript. It may, for example, be rejected because another and similar article upon the same subject has already been accepted and awaits publication; because it could not be published for so long a time that it would become unseasonable; because it would more appropriately appear in some other journal, etc., etc. We cannot undertake to explain the especial reason for not accepting a paper.

4. The probability of the acceptance of an article, as well as the likelihood that it will be extensively read, is greatly enhanced by its brevity. Useless introductions and more useless perorations are always well omitted. Expression should be condensed; not so much as to exclude or to render obscure important things, but sufficiently to economize the time of the busy and tired practitioner and save mental friction in clearly comprehending the article. The results of good thinking, good observation, or good work, can be given in few words—and, with certain rare exceptions, it is results that medical men want.

5. THE NEWS especially desires brief, crisp clinical memoranda and short, concise articles on living subjects—articles epitomizing observations and facts occurring almost daily in the practice of every practitioner. A vast deal of material highly valuable to medical science and to humanity is constantly lost because busy men feel that they have not the time or ability to write elaborate papers. This is wrong. Everyone has some peculiar experience, sees exceptional aspects and phases of disease, has peculiar abilities or methods of practice, comes repeatedly upon a highly anomalous, suggestive, instructive, or interesting case. If such cases were properly placed on record, medicine would be greatly advanced. THE NEWS desires to become the medium of such publication and record.

6. Communications should be prepared in compliance with the following suggestions:

a. Paper larger than 8 × 10 inches should never be used.

b. The paper should be good, white writing paper, not news or tissue-paper.

c. If possible, a manuscript should be type-written.

d. Only one side of the paper should be written upon.

e. A blank margin, at least one inch wide, should be left at the left-hand side of the sheet.

f. Communications should be written in black, non-copying ink.

g. Writing, and especially all proper names, should be distinct and plain.

h. A sheet on which many corrections, interlineations, etc., have been made, should be rewritten.

i. If possible, manuscript should never be folded or rolled.

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ORIGINAL ARTICLES.

CLINICAL REMARKS ON A CASE OF ACUTE MILIARY TUBERCULOSIS.

BY WILLIAM PEPPER, M.D.,

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MR. J. E. F., twenty-eight years of age, was admitted to the University Hospital on September 28, 1891. He was a farmer and had enjoyed good health until two years ago, when a horse fell upon him. He was in bed a few days on account of sprains and bruises from this accident, and three weeks subsequently had an irregular febrile attack, which was called "typhoid malaria." Unfortunately, we cannot be sure that this irregular fever was not symptomatic of some local trouble in the chest, resulting from the severe injury. He got better and enjoyed fair health until October, 1890, when, after a spell of influenza, he went back to work, but soon broke down and was not well afterward.

He had a cough all winter, with scarcely any expectoration; he had a sense of weight and of fulness in the left side and occasionally some pain about the lower part of the left chest. In May he had an acute exacerbation of pleuritic trouble, with sharp pain in the left side, and was confined to the house for a month. Almost every day he felt a sense of chilliness, followed by fever, but he rarely sweated. One year ago he weighed 160 pounds, but on admission to the hospital he weighed only 117 pounds.

From the time he was admitted to the hospital, on September 28th, to the date of his death, October 18th, he presented frequent and irregular febrile paroxysms. At intervals of one or two days the temperature would suddenly rise from 99½° or 100° to 102½°, 103°, or even 104°. This rise would occur in a few hours and would soon be followed by an equally abrupt fall, attended with only a moderate amount of sweating. These paroxysms were not at all controlled by large doses of antiperiodics. Repeated careful examination of the chest showed evidences of circumscribed pleural effusion in the lower part of the left chest, posteriorly. Elsewhere, both on the left and right sides, there was ample resonance on percussion, but the respiratory murmur was feeble and the vocal resonance and fremitus seemed less than normal. There were some small crackling râles over the lower lobe of the right lung, posteriorly. There was very little cough, and the only expectoration was a trifling amount of grayish gelatinous mucus. This was repeatedly examined for tubercle bacilli, but with negative results.

I may, indeed, anticipate here by saying that, on the very last day of life, a specimen was obtained that showed a few bacilli, but, of course, this was too late to be of any guide in diagnosis, as the microscopic results were not obtained until after the autopsy had been made. The heart's action was rapid, weak, and somewhat irregular. The apex-beat was feeble and diffused. There was a soft, systolic murmur over the body of the heart. The urine was normal, the liver was not enlarged, and the spleen was only moderately so.

In explanation of the paroxysmal fever, naturally the first and most hopeful suggestion that occurred was that a circumscribed empyema existed on the left side; but when, on October 3d, I tapped the chest, I obtained twenty-four ounces of clear, deep-reddish fluid that, under the microscope, showed many red blood-corpuscles, a few leucocytes, and small oil globules. Its reaction was slightly acid, the specific gravity 1016. On boiling, it almost solidified. Careful examination showed no tubercle bacilli.

The occurrence of hemorrhagic effusions in the chest is most frequently encountered in cases of malignant disease of the pleura; it is decidedly rare in tuberculosis. The absence of bacilli is to be specially noted. Of course, the character of this fluid did not help to explain the peculiar paroxysmal fever present. The possibility of ulcerative endocarditis was necessarily taken into consideration. No history could be obtained of cardiac disease, and the murmur present was soft and certainly not of organic nature. It is true that the spleen was somewhat enlarged, but there were no evidences of emboli and the urine was free from albumin or casts.

The patient's strength failed rapidly, the breathing became more and more rapid and shallow, the pulse very rapid and feeble, and death occurred on October 18th. The post-mortem examination revealed complete obliteration of the pericardial sac by old and dense adhesions that, of course, had interfered seriously with the action of the heart. There was no organic disease of the valves, so that it was clear that the murmur heard over the heart had been functional and dependent upon irregular or defective ventricular action. The left chest presented extensive lesions of old pleurisy with dense layers of organized and false membrane that had recently become the seat of miliary tubercles. Both lungs presented throughout the most typical lesions of acute disseminated miliary tuberculosis. The minute nodules were separate and remained in their recent gray, translucent condition. Everywhere they were separated by alveolar structure. At the lower extremity of the small intestine there was an area of fungous ulceration almost encircling the bowel and extending fully two inches up from the ileo-cecal valve.

It is difficult to say what was the initial lesion in this interesting case. Not improbably it was the pleurisy on the left side, which may have resulted from the accident, and which had been the cause of the irregular fever that was called "typhoid malaria." There had been very little cough, considering the long-standing extensive lesions in the chest, and expectoration was almost entirely absent up to the last. The ulceration of the intestine seems to have caused no diarrhea; there was no history of looseness, and while he was in the hospital the bowels were rather constipated.

There are many impressive lessons to be learned from the case. Not the least important is the extreme caution with which our new and exquisitely delicate means of diagnosis are to be employed. The very fact that one has an instrument of precision disposes to unlimited confidence in its operation. This is right when the observation is made with care, and when it gives positive evidence in the affirmative. It is very different when it gives negative evidence. Thus, had the examination of the sputa shown tubercle bacilli, the diagnosis would have been cleared up at once. There was a temptation to attach too much importance to the repeated failure to detect bacilli. An ophthalmoscopic examination should have been made, but this was overlooked. In not a few cases of acute malarial tuberculosis I have derived great assistance from finding retinal tubercles. This same caution must be observed in the use of many of our new, delicate diagnostic tests. It is eminently true of the chemical examination of the contents of the stomach.

The heart murmur, taken in connection with the enlargement of the spleen and the absence of bacilli from the pleural liquid and from the sputa, raised the interesting question of the possible existence of ulcerative endocarditis. One meets with the same paroxysmal type of fever in this disease, but the heart symptoms are usually more marked than they were in this case, the spleen is larger, evidences of septic embolism are common, and in particular the urine nearly always shows albumin and casts. Everyone knows how obscure are the physical signs in many cases of acute miliary tuberculosis. The lungs will present innumerable minute nodules disseminated throughout their tissue, and yet prior to death there may have been good percussion resonance, absence of râles, and at most a marked feebleness of respiratory murmur, with some impairment of vocal fremitus and resonance. But then, as in this case, the disturbance of breathing is out of all proportion to the demonstrable lesions, and this of itself should excite suspicion. It is true that, in this case, the matter was complicated with the existence of the pleural effusion on the left side and the adherent pericardium. This seemed to go far in explanation of all the symptoms except the paroxysmal fever. The influence of pericardial adhesion in causing a cardiac murmur without valvular lesion was well illustrated.

Upon the whole, the case seemed a most interesting and instructive one as an illustration of acute tuberculosis, with a great enhancement of the difficulties of diagnosis that often surround that fatal malady. The date at which the rapid tuberculous development took place in this case cannot be determined, but everything indicates that it was quite recent.

THE ETIOLOGY OF STOMATITIS APHTHOSA.[1]

BY F. FORCHHEIMER, M.D.,
OF CINCINNATI, O.

THE term aphthosa, as old as Hippocrates, has caused more confusion than any other in the nomenclature of diseases of the mouth. Even at the present day, so much or so little may be included in the term aphtha that, for the sake of precision in diagnosis, the word should either be entirely dropped or its meaning so clearly defined that there can be no reasonable room left for error. Without going into the subject historically, which I have done elsewhere, it will be well to state here that the aphthous form of stomatitis referred to is that disease first defined by Bohn. To Bohn belongs at least the credit of first having published the views of other authors besides himself, which finally culminated in making a precise clinical picture of stomatitis aphthosa. If we could adhere to this, and it seems both feasible and practicable to do so, we would have a definite term for a clearly defined clinical picture. If, on the other hand, any ulceration of the mouth, any small loss of substance in the mucous membrane, is called an aphtha—as has been done and is being done—we shall never arrive at any exact conclusions.

Stomatitis aphthosa is a disease characterized by general and local disturbances—the general disturbance in the form of fever and other constitutional symptoms, the local disturbance as an eruption of aphthæ. The aphthæ (and in this I differ somewhat, though not essentially, from Bohn) are to be looked upon as vesicles modified by the locality in which they appear, *i. e.*, the mouth. They are also changed by the action of moisture, being constantly bathed in saliva from the irritated mouth. When, as is not infrequently the case, the eruption also appears upon the skin around the mouth, there can be no doubt of the nature of the eruption; and if, as I have shown latterly in one case, applications of warm water are kept up constantly, the history of these vesicles will be the same

[1] Read at the meeting of the American Pediatric Society, held in Washington, September, 1891.

as that of those within the mouth. In brief, then, we would call stomatitis aphthosa a vesicular eruption in the mouth, with certain constitutional symptoms.

The cause or the causes of this disease have eluded detection. Without disregarding the opinions of others, there is always one special pet view on this subject. Perhaps the greatest number of authors are agreed in ascribing this disease, like all others, to those glittering generalities that are so well known to all of us in connection with the etiology of children's diseases. The one calls it struma, the other scrofula, the third malnutrition, the fourth tuberculosis, and so on *ad infinitum*. I am not prepared to say that unhealthy children are more predisposed to this disease than healthy ones. Whatever our theoretical views may be regarding the vulnerability of children otherwise affected, my observation has led me to believe that the general condition of a child, so far as we can see, has nothing to do with an attack of stomatitis aphthosa. That there is an individual predisposition, I firmly believe; in what this consists I do not know. Children in the best of health will sometimes have an attack without apparent cause. Teething, as well as everything else, has been accused of producing this trouble. It can hardly be out of place to say that this view is simply based on the *post hoc ergo propter hoc* method of reasoning. If we were to accept everything that follows or accompanies the coming through of teeth as being produced by dentition, we had better close the book, so far as the etiology of disease for the first three years of life is concerned. It can be proved beyond a doubt that aphthæ are not tuberculous, therefore not scrofulous or strumous. There is a rare form of tuberculous stomatitis, so rare that every case ought to be recorded; but, so far as I am able to learn, it has nothing in common with the trouble we are now discussing. It is quite certain that no evidences of tuberculosis have been found in all the bacteriological investigations made by others, as well as by myself. As usual, "catching cold" has been charged with the cause of this disease. So little that is positive can be said in this direction that the less we say the better.

After these general causes are disposed of, the most common belief is probably that aphthæ are always due to a deranged stomach. This is a very natural view, because, as a rule, aphthæ are associated with some derangement of the alimentary canal. The routine practice is about as follows: ulcers in the mouth—positive indication for rhubarb, calomel or hydrargyrum cum creta. A careful examination of each individual case will prove that the child was ill before the sore mouth came on—that, as it were, the gastro-intestinal symptoms represented a sort of period of invasion for the disease. No one would for a moment believe that the eruption of scarlatina comes from a deranged stomach, although of all diseases it is most frequently preceded by vomiting. Errors of diet are so common in childhood that it is almost impossible to exclude them in searching for the causes of disease. I have seen three children in the same family have an attack of aphthous stomatitis: in the older two, errors of diet could be taken into consideration; in the third, as he had taken nothing but sterilized milk, this was impossible.

Yet we are constantly confronted with the statement that the child's stomach has been deranged for the last few days, and that now the ulcers have appeared there certainly must be some connection between the two. It is almost impossible to conceive of the mucous membrane of the mouth being affected by continuity from that of the stomach; the nervous connection is a very remote one; but the clinical fact remains as already stated. If the alimentary canal is primarily the cause of the trouble there is but one explanation, and that is that a something is excreted by the saliva that causes these ulcers to be formed. But, for various reasons, the mechanism is not so simple for aphthæ; it might be given as an explanation of the existence of those small follicular ulcers so common with some patients, and would possibly be satisfactory; in aphthous sore mouth there is another factor that seems absolutely essential.

For the last ten years the view has been gaining ground that stomatitis aphthosa is the manifestation of the foot-and-mouth disease in cattle. This view was first brought forward by Sagar in 1764 and has been corroborated by many observers in various parts of Europe. (See Bollinger: *Ziemssen*, vol. iii, p. 581.) Hertwig (1834) was the first to prove the connection by direct experimentation; he and three other physicians drank infected milk, and all three were attacked by stomatitis aphthosa; in Hertwig's case the eruption also appeared upon the hands and feet. These results were verified by Jacob in 1846. On the other hand, a great many authors, of whom Cnyrim is the last, have had occasion to give their evidence on the other side of the question. It must be confessed that the number of observers who have been able to verify this connection is steadily increasing, and that the view itself is being more generally accepted. This would place the affection in the class of infectious diseases. Admitting that this view is correct for Europe, according to my information from veterinary surgeons and their literature it could not be true for this country. Foot-and-mouth disease is an exceedingly rare disease in this country—indeed, it is claimed by some that no well-authenticated case is on record. From the report of the United States Treasury Cattle Commission, 1883 (*Amer. Vet. Rev.*, vol. vii), I learn that an invasion

of foot-and-mouth disease swept over northern New York and New England in 1871. In 1883 diseased cattle were landed in New York by two ships (the "France" and the "Nessmore") employed to carry cattle, and the cargo, which was returned to the other side, became infected on board, as the period of incubation seems to be only thirty-six hours. This and other previous experiences (see a long correspondence, *Report Department of Agriculture*, "Diseases of Animals," Washington, 1881) gave rise to the idea, held in Europe, that the foot-and-mouth disease may originate in this country. In 1884 Dr. A. A. Holcombe (*Vet. Review*, vol. viii) reported an epidemic in Kansas, but ill-effects in human beings are not mentioned. In the same year Geo. H. Bailey, D. V. S., reported an epidemic in Portland, Maine, brought in by Hereford cattle. These are the only records of epidemics in this country that I have been able to find; it is claimed by veterinary surgeons that no case has ever originated in this country, and by some, as has been stated, that no well-authenticated case is on record.

However this may be, I have taken the trouble in every instance to look into the milk-supply, and have questioned the surgeon in attendance at the dairies from which the milk-supply has been obtained, always receiving the answer that there never had been a case of foot-and-mouth disease in Cincinnati. Infection would be the most rational explanation for the causation of the disease, and in order to determine whether there could be a contagium vivum, I have had the aphthæ examined bacteriologically, all precautions being observed and all the various methods being employed. The result, when positive, was to show the presence of pus-producers, and of nothing more.

Dr. Eugene Fränkel (*Virch. Archiv*, Bd. cxiii, 111) describes the process as a pseudo-diphtheritic one (Weigert), practically agreeing with Baginsky (1884), who found microörganisms, cocci, and a few bacilli. Fränkel examined three cases bacteriologically, in two of which he found the staphylococcus pyogenes citreus (Passet), and in the other the staphylococcus pyogenes flavus (Rosenbach). He hastens to the conclusion that these organisms are the cause of the disease, although he has never succeeded in producing any lesions by inoculation in lower animals, thus disregarding one of the most important evidences as to the pathogenic nature of an organism.

If we accept the view of the causal relation of foot-and-mouth disease and stomatitis aphthosa, and if we reject such a connection for this country, we are left the choice of two conclusions: either we do not have stomatitis aphthosa, or the disease may be produced by more than one cause.

In regard to the first assumption—the non-existence of the disease in this country—I believe everyone will agree that we see as well-defined cases here as can be seen anywhere in Europe. I am sure that I have seen as well-marked aphthæ in my own clinic as I have abroad. The variety of the low forms of life found shows, either that we have not found the pathogenic form, or that their invasion is a secondary process, due to the existence of a soil made fertile by the aphthous process. In foot-and-mouth disease any abraded surface may become affected, so that both a local as well as a general infection must be accepted; whether both causes be the same cannot be proved at present. Cases are on record in the human being, in which, upon the drinking of infected milk, the eruption also appeared upon the hands (Hertwig). In these cases the eruption must certainly have been due to general and not local infection. In the absence of pathogenic forms, we must look for some chemical agent that can be carried into the circulation, producing an eruption upon the mucous membrane as well as upon the skin. Purely theoretical as this may seem, it has been accepted by dermatologists for many skin diseases (eczema, herpes), and only awaits conclusive proof in the isolation of these bodies, which will become possible with the further advances in animal chemistry.

Now, taking for granted that a chemical body, formed in foot-and-mouth disease in cows, carried by the milk, produces stomatitis aphthosa in the human being; that we have stomatitis aphthosa in the absence of this foot-and-mouth disease, the inevitable conclusion must be that more than one cause can be found for this disease. Possibly, when bacteriological methods will have become still better developed, a lower form of life may be found as the first cause of this disease; but for the present this view seems untenable, especially as it has been proved that inflammation may be caused by other agents than lower forms of life. (Grawitz, Buchner, and others.)

In addition, we must be reminded of the fact that aphthæ are frequently associated with other diseases: pneumonia, intermittent fever, gastro-intestinal disturbances, the acute exanthemata, etc., so that the position of multiple causes becomes very much fortified. It seems out of the question to accuse a local cause, although wounds and burns may produce lesions that cannot be distinguished from aphthæ. In this direction, therefore, there seems nothing left but the acceptance of some general causes as indicated. The question would arise: How do these causes produce lesions in the mouth?

It has always seemed to me that aphthæ were nothing more or less than the eruption of herpes. The reasons for this are as follows: If we make an artificial aphtha (Gerhardt, Bohn, and myself) by

any cause that would produce a vesicular eruption upon the skin, the lesion is identical with the one we find in stomatitis aphthosa. In a great many cases of stomatitis aphthosa we find herpes facialis, the eruption being continued from the mucous membrane to the skin; and lastly, the diseases in which herpes occurs most frequently are those in which we commonly find that form of mouth trouble. If we take a vesicle and develop it in the mouth, it will, as has been stated before, undergo the same changes as an aptha. In brief, then, the etiology of stomatitis aphthosa, in the great majority of instances, is to be studied as the etiology of herpes non-parasitica. Dermatologists regard herpes, especially herpes zoster, as a disease of nervous origin (Bärensprung, Kaposi, Sattler, and others); this would include the herpes secondary to other diseases, for no one can claim for the herpes facialis of pneumonia that it is a zoster—occurring, as it usually does, upon both sides of the face in children (Thomas). The same can be said of stomatitis aphthosa. It does not follow the course of any one nerve exactly, although in the majority of instances the eruption will be found along some branch of the fifth pair of nerves, especially the lingual. Verneuil (*Annales de Dermatologie*, 1885) states that herpes may be of traumatic origin. When a nerve is injured the eruption will appear at its peripheral distribution.

In those cases, then, in which we have been able to find the pathological lesion of herpes, it has been found to be some irritative change in the ganglion from which the nerve arises, or in the nerves themselves. Naturally, there must be a something that produces this lesion, and it would not be an unreasonable supposition to look for this something in the form of a body the result of bacterial activity, or of some faulty process in the digestive apparatus. A similar process, not exactly analogous, will be found in diphtheria, in which the Löffler bacillus produces the local manifestations and the toxine the remote ones. If we take the poison of foot-and-mouth disease, this will represent the toxine of diphtheria, already formed, which, absorbed from the intestinal tract, produces the general disturbances, and finally the aphthæ, as the result of irritative changes in the nerve-ganglia. This something, called ptomaïne by the modern French writers, does not require for its origin the presence of microbes. It may have its origin within the body, as the result of a perverse digestive process within the alimentary canal, the liver, or even during the process of reduction, within the circulation.

Parrott and Erb were the first to have claimed that herpes might be looked upon as an infectious process, and Hardy (1885), Delétang (1886), Landouzy (1883), and Feulard (*Dictionnaire Encyclopédique des Sciences Médicales*, 1888), have continued the theory, Feulard arriving at the same conclusions that I have here expressed.

Nothing more can be claimed for this view than that it is an hypothesis, with many things necessary to be proved before it can become susceptible of positive proof. The original poison must first become isolated, then detected in the circulation, and, finally, it will have to be proved that this poison is capable of producing aphthæ.

But if we grant the connection with foot-and-mouth disease—and at present this conclusion is the result of clinical observation only—it would seem that there is justification for the view already expressed. Although so much is left to be proved before this view can be accepted, we are, nevertheless, justified in expressing it, though purely the result of observations in the various forms of herpes and deductions from these observations.

The last etiological factor is contagiousness. Aphthæ will be found in several members of one family at the same time. I have had occasion to observe this in several instances. This is the only evidence that could be brought forward to prove the contagious nature of the disease. It would seem more natural, however, to claim that the same cause had been operating upon these various members of the same family, although the aphthæ will not appear on the same day in each individual. The latter fact could be readily explained by taking into consideration the varied susceptibility of individuals, and the quantity or quality of the poison introduced into each of these individuals.

In conclusion, I would sum up the results as follows:

1. Stomatitis aphthosa is a disease produced by some form of deleterious material in the circulation.
2. This material may have its origin in various processes, bacterial or otherwise.
3. It may, therefore, be of various kinds.
4. This material acts upon a nerve or nerves, or upon a nerve-center or nerve-centers.
5. It produces an herpetic eruption that is the aphthous process.

PARALYSIS FOLLOWING MEASLES.

Based Upon Forty-one Cases.

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The influence of acute febrile diseases in the production of palsies did not escape the observation of some very early writers. Anyone that feels an interest in the historical aspect of the subject will be amply rewarded by consulting the series of remark-

able articles by Imbert-Gourbeyre.[1] James Lucas,[2] however, was the first, so far as I have been able to discover, to report, in sufficient detail to make it of use clinically, a case of paralysis following measles. The patient was a woman, twenty-three years old, and the palsy a paraplegia. An interesting fact connected with this case is that nine years previously the patient had developed the same symptoms following an attack of variola.

All writers on the subject are agreed in declaring that paralysis as a sequel of measles is very rare. Thus, Parrot told Landouzy[3] that he had never seen a single case, though for ten years he had had the opportunity of making observations in a hospital in which measles reigned *en permanence*. In Wallenberg's[4] series of 160 cases of cerebral palsy, 9 are said to have followed measles; but the number should be 8, for Bourneville's case is recorded twice (Cases XXIX and XXXII). Gowers has met with 7 cases, Rilliet and Barthez have reported 1, and Osler[5] and John Abercrombie[6] each 4. Altogether I have been able to find only 41 cases, one of which I observed myself.

Spinal palsies, as a rule, are much more frequent among children than are cerebral palsies. During a period of time in which 120 cases of the latter visited the Infirmary for Nervous Diseases in this city, there were nearly 500 of the former (Osler). But the large majority (about 35) of the cases of palsy following measles collected by the writer have been cerebral. This preponderance of cerebral over spinal cases may be more apparent than real—that is to say, it may simply have been my fortune, though I think not, to find more of the former than of the latter.

The clinical differences between cerebral and spinal palsies are well marked. In the former there is paralysis with spasmodic movements; the reflexes are exaggerated, but the electrical reactions remain normal, and wasting does not develop quickly or attain an extreme degree. In spinal palsies, on the contrary, the palsy is associated with rapid wasting, the reflexes are soon lost, and marked changes in the electrical reactions occur, while rigidity is absent.

The forty-one cases collected furnish sufficient data for a study of infantile palsy following measles.

The onset of the disease is abrupt. It is generally marked by a convulsion, or by a derangement of consciousness varying from simple drowsiness to coma. The latter appears to have been the mode of origin in my own case. There may be a single convulsive seizure or a series of seizures. In Bernhardt's[1] case convulsions occurred nearly every eight days for three months. In Bourneville's[2] case the initial attack of convulsions lasted seven hours, and the convulsions recurred two months later. Sometimes the convulsions are at first general, while the extremities of the affected side are rigid and contracted. This was the condition in Bateman's[3] case—the left side was paralyzed, and in the intervals of the convulsions the right extremities were in continual motion.

In a number of cases the disease develops without convulsions, or with convulsions so slight that they have entirely escaped observation. My own case is an example of this, and for convenience will be reported here.

A boy, thirteen months old, developed measles of moderate severity about May 13 or 14, 1890. As the eruption faded, catarrhal pneumonia manifested itself. When convalescent from the latter, on May 30th, between three and five o'clock in the morning, it was discovered that he was paralyzed on the left side. There had been no palsy during the preceding afternoon and evening, for he had been able to move both arm and leg perfectly. When seen on the following morning, the child was in a condition of partial stupor, and was turned partly toward the right side. The right eyelid could not be opened voluntarily. The pupils were contracted. The left arm and leg were flaccid and motionless; when raised they dropped like lead. The left foot was rotated outward and rested on its external border; the toe was pointed and the heel elevated. There was anesthesia of the affected side. When the features were wrinkled, the left side of the face remained motionless. There was slight elevation of temperature; the pulse was irregular in rhythm; the breathing was Cheyne-Stokes in character, but not noisy.

By the first of June, some contracture of the left fingers was noted, with beginning return of power. The child had begun to suck, the pulse improved, but the breathing remained much as it had been. From this time on, power slowly returned in arm and leg, but the contractures persisted, and the face continued paralyzed. At the present writing (November, 1891), the child shows considerable improvement, most marked in the facial palsy. There is increased power in both arm and leg, and absence of contractures. The nutrition of the child is in excellent condition, but it has an insatiable appetite, and its mental condition is not encouraging. Speech is much affected, the child being very slow in acquiring words, and articulation being poor.

In Scheper's[4] case, the onset was marked by coma, which persisted nearly for three days. When this dis-

[1] Gazette Médicale de Paris, 1863, No. 26.
[2] Lond. Med. Journ., 1790.
[3] Des Paral. dans les Mal. Aiguës. Thèse, Paris, 1880.
[4] Jahrbuch für Kinderheilkunde, 1886, xxiv, 384–439.
[5] Cerebral Palsies in Children.
[6] Brit. Med. Journ., 1887, vol. i, 1323.

[1] Virchow's Archiv, 1885, cii, 26–80.
[2] Comptes rendus de la Soc. de Biol., 1876, 163.
[3] Edinburgh Med. Journ., 1805.
[4] Berliner klin. Wochenschrift, 1872, 517.

appeared, the child (eight years old) was unable to speak. The sensorium was intact, and replies to questions were made by movements of the head. The child was unable to stand, but could move the limbs. Coördinated movements were impaired: the child could not take a cup directly to its mouth, but would carry it to the brow. In this case recovery was remarkably rapid—paresis rather than palsy existing. In fifteen days the patient began to talk, the voice being nasal and high-pitched; it could then also stand and take things better—improved coördination.

In Baxter's[1] case the onset was accompanied by delirium. Slight palsy was just perceptible at the height of the disease, but the palsy became more marked as the febrile symptoms abated, so that on the fifth day the child was totally incapable of moving any of the muscles of the right side. The muscles on this side were flabby, insensitive, and of a lower temperature than in health. In this case also recovery was rapid, being complete on the twenty-sixth day. Baxter believed the rapid recovery to be attributable to the administration of nux vomica.

Following immediately upon the convulsion or coma, palsy or paresis is detected in the muscles of the affected side, or, in the case of paraplegia, in the affected limbs. At first the affected parts are flaccid, and more or less anesthetic. If recovery is very rapid there may be no development of rigidity, with contractures. When the latter develop, sensibility has already become restored.

In cases of palsy of spinal origin, the onset is free from either convulsions or coma. In Perret's[2] case, the patient, after an ordinary attack of measles, believed himself well, when he suddenly perceived considerable feebleness of the lower limbs. For five days he could move his limbs in bed only with much difficulty, and it was absolutely impossible for him to stand erect. At no time was there pain in the affected parts. Retention of urine induced him to enter the hospital, where Perret saw him. Beyond a little pallor he presented the appearance of health. The reflexes were intact and so was sensation. He dragged the feet a little in walking, and they did not feel solid under him. There were no evidences of muscular atrophy. Nothing particular was noted regarding the arms. The patient had to be catheterized regularly, and there was occasional incontinence of feces. Speech was not altered; there was no nystagmus, no appreciable trembling of the head or limbs. Improvement was steady and rapid.

In ascending spinal palsy the onset is more gradual. In Bergeron's[2] case, the patient entered the hospital August 23, 1867. By September 1 the palsy began to be sharply defined. Muscular contractility in the lower and upper extremities was diminished, swallowing was difficult, the voice nasal. By October 14th, under tonics and electricity, the patient appeared to have improved, but on the next day he was worse and the palsy was ascending. On attempting to swallow, food passed into the trachea. Two days later it is stated that the lungs had lost their normal contractility, and that mucus accumulated in the bronchial tubes and throat. The sphincter ani was paralyzed, the face was pale, the pulse 136, the respiration 52. Death resulted from slow asphyxia.

Liégard[1] was more fortunate with his case. The patient, a boy, two years and three months old, developed measles, after having had an exhausting diarrhea for fifteen days. Between five and six weeks after the attack of measles began, palsy was first noticed by the mother. Nine days later the condition was as follows: In addition to great weakness of the upper and lower extremities, the head fell forward on the chest, from palsy of the muscles of the back of the neck. This symptom was manifest and had been gradually increasing for two days. Deglutition at the same time became more and more difficult; mastication also was interfered with. The skin appeared to be insensitive to puncture and to pinching. Improvement in the condition was gradual and steady. Less than three months after the palsy developed it is stated that the patient was as well as though he had never been sick.

The symptoms in Barlow's case[2] of early disseminated myelitis are interesting. The patient was a man, twenty-three years old. The eruption of measles occurred June 10, 1885, and by June 13th it had begun to fade. There was a slight systolic murmur at the apex; the pulse was 76. The only complaint on the part of the patient was of soreness referred to the sternum, since June 11th. At midnight of June 13th, the man was unable to pass his urine. The temperature rose the next evening to 103.8°, and on the next morning it was 103.2°. The patient was very drowsy, irritable when roused, and speedily again lapsed into drowsiness. The pupils were sluggish, the grasp of the hand was weak, the limbs were immovable, but sensation was preserved. There was no rigidity and no knee-jerk. The systolic murmur already spoken of persisted. The patient retched, but no actual vomiting occurred. On the morning of June 15th there was less drowsiness, but in other respects the man was worse; he could speak only in a whisper; the fixed pain in the breast-bone was still present; the urine was retained; cyanosis gradually developed, and death occurred at 9 P.M., June 15th, five days after the appearance of the eruption of measles.

[1] Med. Repository, New York, vol. viii, 107.
[2] Clin. Méd. de l'Hôtel-Dieu de Lyon, Paris, 1887.
[3] Gaz. des Hôpitaux, 1868, 5.

[1] Gaz. des Hôpitaux, 562, December 3, 1859.
[2] Med. Chirurg. Trans., 1887, lxx, 77.

As regards the type of palsy following measles, the paraplegic is said by Landouzy to predominate; whereas palsy of the velum palati and of the muscles of the neck is peculiar to diphtheria, while in intermittent fever the type is that of right hemiplegia with aphasia. Again, the more or less permanent paraplegias are seen, he says, especially as a sequence of typhoid fever and of dysentery, palsy following scarlet fever being cerebral more often than spinal and peripheral. I cannot confirm or disprove the accuracy of Landouzy's statements as to the other diseases mentioned, but he is wrong so far as measles is concerned. Here the type is certainly cerebral, and most frequently it is hemiplegic.

The paralysis usually appears during convalescence, and most frequently from the latter part of the first week to the close of the third week after the onset of the attack of measles. Of twenty-one cases that are reported in sufficient detail to give the information, eleven developed the symptoms of palsy between the fifth and the sixteenth day, while five more probably belong to this period from the fact that the palsy is said to have occurred "during convalescence" (three times), "on the twelfth day after the disappearance of the eruption" (once), and "at about the time of the disappearance of the eruption" (once). In the remaining cases, three developed convulsions on the second day of the eruption, one a month after the onset of the measles, and one in from five to six weeks.

The duration of the cerebral palsy depends upon the severity of the attack. In six cases it was between sixteen days and eight weeks. Disturbance of speech persists longer than the other evidences of the nervous lesion. In one case there was still such disturbance at the end of nine months, and in another case, aphasia lasted for two years. In Sympson's[1] case, a girl, three and a half years old, developed aphasia and right hemiplegia in connection with an attack of measles, and when thirteen years old speech was still imperfect and there was atrophy of the right extremity. It is evident that in many cases the lesions are permanent, and Bourneville's[2] case, which will be referred to later on, leaves no doubt that the future of the child is clouded by the possibility of epilepsy.

One case of spinal paraplegia (Lucas) is said to have lasted more than a week, and one of atrophic spinal palsy six months. In a case of cerebral paraplegia the duration is set down as from two to three weeks. Barlow's case of disseminated myelitis resulted in death in five days, and a case of ascending spinal palsy recovered in three months. In Bateman's case the patient survived the first attack, the dangerous symptoms subsiding in five weeks. Subsequently convulsions reappeared, and death ensued three months after the onset of the disease.

Our knowledge of the pathology of infantile palsy is far from complete, but much, nevertheless, has been learned through the careful observations of Gowers, Ross, Osler, Bernhardt, Wallenberg, and others.

So far as birth-palsies are concerned, it is certain that hemorrhage, frequently meningeal, is the cause of the palsy, and that difficult labor in many cases accounts for the hemorrhage. In the palsy following an infectious disease, however, the pathology is more obscure, for the great majority of the patients do not die in the attack, and when death occurs at a more or less remote period the morbid conditions found are secondary to a still unexplained primary pathological process.

Palsy following measles is not a mere coincidence. It is less frequent than palsy following diphtheria and scarlet fever, but it is universally admitted that there is a connection of cause and effect between the two. Strümpell has suggested that the morbid process is an inflammation, an encephalitis of the cortex, similar to that present in anterior poliomyelitis, or infantile spinal palsy. But as the palsy is in a number of cases complete, and yet of transient duration, it is difficult to believe that in these cases there has been inflammation. Encephalitis, nevertheless, should be considered one of the causes, for Barlow has reported one case of disseminated myelitis following measles, the diagnosis having been confirmed by autopsy with careful microscopical examination; and if myelitis can occur, why not encephalitis?

In cases in which organic heart-disease exists, embolism is a possibility. But heart-disease is rarely present, and Osler declares that the ten specimens in the museum of the Elwyn institution constitute evidence against the embolic theory.

The blood transmits the poison of measles to all parts of the system. The eruption is seen upon the fauces before it appears upon the body, and the catarrhal pulmonary symptoms are in all probability due to the presence of the eruption upon the mucous membrane of the respiratory tract. It may be that in carrying the poison the bloodvessels themselves become altered in their structure, so as to permit of extravasations of serum or blood. If the amount be very small and reabsorption be very rapid, we can understand how the palsy may be transient; or it may be that an inflammation of the arteries is set up, as a result of which the blood is withdrawn from certain areas. Osler suggests that a widespread arteritis might initiate a sclerosis, and, if suddenly developed, a porencephalus, and sclerosis and porencephalus are lesions found at autopsies in cases of

[1] Brit. Med. Journ., 1890, vol. i, 283. [2] Loc. cit.

infantile palsy. Gowers thinks the probable cause of the palsy is thrombosis of the cerebral veins and of the sinuses. While this occurs in infancy, I do not know of a case in which it has been demonstrated by autopsy in infantile palsy.

The fact that most of the cases of palsy following measles occur in about the second week of convalescence seems to indicate that a change has been taking place in the arteries, dating from the active stage of the disease, and that when this arterial change reaches a certain point, we have an apoplexy, a leakage of serum, or an occlusion of a number of arteries from general arteritis. In Barlow's case we may suppose that the specific poison of measles escaped from the bloodvessels, for the disseminated myelitis was present almost, if not quite, from the onset of the disease, which ran its entire course in five days.

From two cases that have come under my observation, I am the more inclined to believe that the poisons of measles and other eruptive fevers tend to destroy the integrity of the bloodvessels. In the first, a young man, twenty-three years of age, with phthisis of the left apex not far advanced, was suddenly seized with most profuse hemorrhage. In the course of forty-eight hours he must have lost two quarts or more of blood. Previously to the hemorrhage he was without fever, was gaining in weight, and stood a good chance of recovery. Considering the condition of the lung, I was at a loss to account for the hemorrhage. Following the latter, the temperature was continuously high, and on the eleventh day a copious eruption of measles appeared. The hemorrhage in this case appears to have marked the beginning of the incubation-period of measles, and the poison of that disease, added to the existing disease of the lung, was sufficient to determine a hemorrhage.

In the second case, a child, four years old, was seized on the third or fourth day of scarlet fever, when the rash was already much faded, with profuse hemorrhage, apparently from the lungs. When I saw the child the next day, no focus of disease in the lung could be discovered. About a year before this time the child had had disease of one lung, which I feared at the time was tuberculous, but it had recovered, and no pulmonary symptoms existed before or during the attack of scarlet fever.

On the other hand, it is possible that the specific poison of measles, bacterial or other, acts by exciting an inflammation in the cells of the motor area of the cerebral cortex, and in the ganglionic cells of the anterior cornua of the cord.

As, in the great majority of cases, the palsy occurs during convalescence, it might be supposed that this was simply a manifestation of profound muscular weakness resulting from an exhausting disease. This supposition, however, would not be supported by the facts. In most of the cases the attack of measles has been of mild or of only moderate severity, and nothing is said to indicate that the patients were in a depraved state at the time of the attack. In Perret's case, for example, the patient, a robust, very muscular man, became aware of his palsy for the first time when, cured of his measles, he essayed to get out of bed.

While the palsy following measles cannot be ascribed to exhaustion, there is reason to think that special susceptibility to nervous affections is a predisposing cause. In Lucas's case, the patient, on the ninth day of an attack of measles, had paraplegia with incontinence of urine and feces, and she had had precisely the same symptoms nine years before, following an attack of variola. Perret, moreover, is inclined to think that his patient's susceptibility to paralytic influences may have been brought about by his habit of drinking three quarts of wine a day.

The prognosis is good as regards life. In only four of the cases is death said to have occurred. One of these was a case of disseminated myelitis, and one a case of ascending palsy. From this alone it would appear that the spinal palsies are more fatal than the cerebral. But such a conclusion is probably unjustified. Deaths may have occurred later and not have been reported.

The severity of the onset indicates the severity of the lesion, and the rapidity of recovery indicates to a certain extent the degree of ultimate recovery. When the left hemisphere is involved, aphasia may be a symptom. It is usually one of the last symptoms to disappear, and in a modified degree it may be permanent. While the prognosis is good as regards life, yet, when the palsy does not disappear speedily and completely, the possibility of epilepsy and subsequent imbecility must be borne in mind. Epilepsy may be deferred several years. In Bourneville's case, the child had measles when six years old, and epilepsy developed when it was between eight and eleven years old.

Repeated convulsions increase the gravity of the prognosis, both as regards life and as regards recovery of power in the palsied members. It would appear that epilepsy is most likely to occur when convulsions have appeared at an interval, say, of several months from the initial attack.

The treatment of palsy following measles is naturally divided into that of the convulsions or coma ushering in the attack, and that of the results of the nerve-lesion. To control the convulsions the patient's head should be elevated and cold applied. The bowels should be opened by calomel, followed, if possible, by a saline laxative. The bromides and chloral are appropriate, and the latter may be given by the rectum. In coma much the same treatment

is suitable, but if there is reason to believe that the coma results from exudation, ergot and belladonna are to be preferred to the bromides and chloral.

As regards the paralyzed members, much can be done to keep up the nutrition of the muscles until the affected nerve-cells have recovered themselves, or until their function has been assumed by other cells. The limbs are usually colder than normal, and should be kept warm by a layer of cotton-batting. Daily massage is of very great service, and should be persisted in for months. Mothers are more likely to follow directions in this particular if they have something to rub in, and if a confidence on their part is expressed in goose-grease, it will be prudent to recommend it. Any unguent will do as well, but, of course, the rubbing and the manipulation are the most important factors.

Faradization of the affected muscles is also of very great service. To obtain the best results, both it and massage need to be kept up with the utmost patience and perseverance for many months. The leg and face usually recover first, the arm last and least.

The spastic paraplegias, such as existed in the two cases of Holmes Coote,[1] and in which there was an approach to the development of equino-varus, have been dealt with by orthopedic surgeons. My impression is that the results have not been encouraging.

The brain-lesions themselves, consisting as they do of sclerosis and porencephalus, offer very little to warrant surgical interference. In a few cases the sclerotic area may admit of removal. As in all chronic nerve-disorders, potassium iodide should be tried; it may be of some service if small doses are administered for a long time.

THE TREATMENT OF INGUINAL HERNIA.

BY ALEXANDER DALLAS, M.D.,
OF NEW YORK; CONSULTING SURGEON TO BAYONNE HOSPITAL.

ALTHOUGH numerous articles are constantly appearing on the subject, the treatment of hernia has not kept pace with the recent advances in other branches of surgery; and to-day there is no subject of like importance in which there is so little interest taken and consequent want of knowledge displayed by the body of the profession. It is still too much the custom among physicians to consign their ruptured patients to the tender mercies of the druggist or truss-maker, who is totally ignorant of anatomy, and whose only object is to effect a sale. To prove the correctness of these statements it is only necessary to examine the methods of treatment in use at the present time, and as these methods naturally divide themselves into the palliative or mechanical, and the radical or surgical, we will first take up the palliative. In the palliative treatment of hernia, trusses of various shapes have been used in all ages to prevent the protrusion of the gut, and, if possible, to effect a cure, and the appliances used to-day are virtually the same as those used a century ago. They are all constructed on the same general principle—a powerful spring, a large pad, and a strong strap, and keep up the rupture by the same means—brute force. The application of the retaining force in these trusses is wrong. When applied laterally, as by the usual method, it is used at a disadvantage, and greater pressure has to be employed, while the pad is bound to slip down until it rests upon the pubic bone. When applied from below upward the greatest pressure is at the lowest point, and the injury to the spermatic cord and vessels is intensified. The shape of the ordinary pad, too, is an anomaly, and its usual method of application is unscientific. Its convex surface, driven into the parts by the powerful spring, and kept in constant motion during walking, etc., bores its way into the hernial opening and actually enlarges it. Another equally serious objection to these trusses, and one which has been entirely too much overlooked, is the fact that, in every case, their point of greatest pressure is at and below the external ring, where there is only integument to prevent the pinching of the spermatic cord and vessels between the pad and the pubic bone. We freely admit the evils due to pressure upon the uterine nerves, and we should no longer ignore the equally serious and positive injury due to pressure upon the spermatic vessels, and which gives rise to well-marked symptoms. Recently flat pads and elastic belts have been introduced, but the flat pads only increase the pressure at their lower edges, and elastic belts intensify the injury by the constancy of their pressure.

Forced by these considerations, I have devised for my own patients a truss that appears to meet all requirements. It is light and cool. It rests upon the pelvis—an immovable support. There is no constricting band around the hips to cause atrophy of the muscles and interfere with every movement. There is, consequently, no excoriation to heal up, as the pad is not disturbed. The belt comes down along the flank, breaking the lateral recoil that causes the protrusion, and so acting as an auxiliary to the pad. The pad itself is small, somewhat diamond-shaped, with its surface slightly concave, the better to adapt itself to the convex abdominal walls. The pressure, applied from above downward, is slight and wholly over the internal ring. Running from the center of the face of the pad to its lower edge is a gradually-deepening groove that prevents compression of the vas deferens and spermatic vessels and nerves.

[1] Hardy et Behier: Path. int., iv, 1880.

But there are cases of hernia in which palliative treatment is not sufficient, and in which more radical measures have to be resorted to. Sometimes the hernia is so large or so painful that the patient is disabled; while, in other cases, an operation is desired by the patient or undertaken at the suggestion of the surgeon. For these cases many operations have been devised by different operators, but we are virtually reduced to the consideration of what may be called the American operation. Introduced by a prominent surgeon, and adopted by his followers, it soon became the rage, and, for the time being, has displaced other and better methods. Naturally, we look for points of excellence in it beyond those of the others, but we fail to find them. In performing it all the safeguards that Nature throws around the canal are cut away and packed together in a heterogeneous mass, leaving only a thin layer of fascia and the peritoneum. On this fascia grow granulations which it is claimed form an unyielding cicatrix strong enough to resist protrusion. Now, in other parts of the body we are taught that cicatricial tissue rapidly disappears under pressure and motion, and we direct our treatment accordingly. (We see a proof of this also in the frequency of hernia after laparotomy, and, should a recent suggestion of Tait's be carried out, the number will be largely increased.) And yet we are asked to believe that this particular cicatrix, subjected to incessant pressure and motion from its very inception, will remain firm and unyielding. Is it any wonder, then, that we see so many cases in which the cicatrix has become so thin that the movements of the intestines can be seen through it, with a protrusion so large that no ordinary truss can hold it, and with a sensitiveness so great that no pressure can be tolerated? The victim of this operation always reminds one of the man in the parable, in which we are told that "the last condition of that man was worse than the first." Fortunately, there are better operations than this, but whatever method be adopted, the surgeon should be able to guarantee his patient that, whether successful or not, his condition will not be made worse than it was. The operation that I believe will give the best results with the fewest drawbacks is as follows: Make the first incision along the pubic bone, commencing at the symphysis, and extending outward from three to four inches; then carry a second incision upward at almost right angles to the first, and parallel with the inguinal canal. Dissect up this triangular flap of skin freely, and turn it back, and the whole field of operation is exposed. (Occasionally it may be necessary to make a third incision down over the scrotum.) Dissect down to the sac in the usual way, loosen any adhesions, push the sac well up inside the internal ring, and fasten it to the external portion of the internal ring with strong catgut sutures, bringing the sutures out above and tying them there. Then bring the pillars of the ring together with several sutures, check all oozing, put in a small drainage-tube, turn down the skin flap, and thoroughly coaptate the edges, and you have virtually a subcutaneous wound. The adhesion of the skin over and around the canal gives a firmness to the parts that they so much need; the sac acts as a pad to divert the protruding gut; the approximation of the pillars narrows the canal to its normal dimensions; the resiliency of the now closely adherent, unbroken skin helps in a measure to prevent further protrusion, while there is no external cicatrix to be irritated by the truss that it is always advisable to put on after the operation.

Midway between the palliative and radical treatment of hernia comes the old Heaton method of injecting into the hernial sac an irritant solution to excite adhesive inflammation. With ordinary precautions, and in properly selected cases, this is perfectly harmless and has given fairly satisfactory results. If the irritant be used in powder form the results are even more satisfactory.

When speaking of the indications for radical treatment I said nothing of strangulated hernia, a class of cases that figure largely in hospital reports, and give a high death-rate. All authorities claim that in a considerable proportion of these cases reduction is impossible and operative interference compulsory. This I no longer believe. In all the years of my practice, part of the time surgeon to works employing thousands of mechanics, amongst whom such cases are frequent, I have never had to operate for strangulated hernia, nor had I ever any trouble in reduction since adopting my present method. When called to a case of this kind I at once give an injection of morphine and atropine, to which latterly I add a little cocaine. I repeat this injection every ten or fifteen minutes until the patient is quite comfortable. Meantime I make him drink every five minutes from a half to a cupful of a mixture consisting of: Strong black coffee Oj, fluid extract of ergot ʒij–ʒiv, and occasionally a little strychnine. Generally, within a half-hour the rupture has become flaccid, and gentle taxis reduces it. I use no anesthetics or hot baths, or external applications, and have reduced cases when other physicians have failed. Of 545 recorded cases of strangulated hernia, 260 died. Of these 260 at least 250 could have been saved by the above treatment.

Professor Benedict, of Vienna, has been elected an honorary member of the Norwegian Society of Physicians, of Christiania.

Dr. C. Wedl, Emeritus Professor of Histology at Vienna, recently died at the age of seventy-six.

WIRING THE SPINOUS PROCESSES IN POTT'S DISEASE.[1]

BY B. E. HADRA, M.D.,
OF CHICAGO.

IMMOBILIZATION of the vertebræ by wiring their spinous processes to each other is a suggestion thrown out in connection with a report of the same procedure in a case of vertebral fracture. The spinous processes of the vertebræ are firmly held together, and when it is considered that there will be no slipping of the wire if the inter-spinous ligaments and the adjacent muscular structures are preserved, and that three or more vertebræ can be wired, it becomes evident that a resistant posterior brace—so to say—can be established, throwing the body-weight on it, and thereby relieving the vertebral bodies. A second gain is the separation of these latter from each other, or from the inter-vertebral cartilages, which, according to the laws of leverage, obviously must follow. The vertebral bodies will thus be prevented from pressing and rubbing on each other. If this be so, the question arises: Under what circumstances is this method called for? In my opinion, it should be tried as soon as any deviation of a vertebra is discovered. It then will not only do what I have claimed for it, but it will also better prevent permanent disfiguration than any other method, because it is more direct than any other. But if an abscess-cavity has already formed, the surgeon will have to decide whether or not its dimensions are too great to be filled up by new bone-formation. If the abscess-cavity is too large, it may be better to allow the diseased surfaces to come into contact and to unite by bony ankylosis with kyphosis. Under such circumstances the wiring will be out of place. Not so, however, if the destruction of the bodies and of the inter-vertebral discs is moderate. We may then hope for the reproduction of a sufficient amount of bone, and by holding the spine in a straight line we shall obviously enforce a desirable final outcome.

The proposed operation does not exclude other and later operations, such as draining, scraping, etc. As can easily be imagined, it may even become a very useful addition to them. For instance, it may greatly assist in keeping the drainage track patulous. Perhaps, also, before bony ankylosis has set in, moderate kyphosis could be reduced by careful extension and manipulation, and the gain afterward secured by wiring.

It is hardly necessary to point out the advantages the suggested method would offer over all others at our disposal. It would do away with all the annoyances of the apparatus, of the long confinement to bed, and of a number of other troubles connected with the usual treatment. But, as a matter of course, it has to be proved to be practicable, effective, and, above all, free of danger. I know from my one operation (though it was for fracture), and from experiments on the cadaver, that the wiring can be done with the greatest ease, so as to be within the reach of the average surgeon. In children the bones may not be strong enough to withstand the grip of the wire, but three or more processes may be included, and thus a greater resistance obtained. As to the direct danger of the surgical procedure as such, I think nothing is to be feared, as may be inferred from the short description to be given.

A median skin-incision is made over the objective spinous processes. I would advise making it rather too long than too short. Now, the long muscles on either side are longitudinally incised with as little laceration as possible, and held aside with retractors—just sufficiently to allow of a good view of the outlines of the spinous processes. Then, with a strong, curved needle carry the silver wire through the inter-spinous spaces above and below the processes to be wired, in a figure-of-8 fashion, as often as is deemed necessary. Then fasten the ends of the wire by twisting, and close the wound. In lumbar operations simple loops around the processes are sufficient, as the processes stand nearly horizontally, and slipping is therefore not to be expected.

Whether in old cases, with much contortion or kyphosis, when no bony ankylosis has taken place, a division of the ligaments will assist rectification or not, I am not prepared to state. I think the possibility that contracted ligaments can stand in the way of reduction cannot be denied.

Finally, it is well to remember that the needle must not enter too far away from the middle line; otherwise injuries to the nerve-trunks may be inflicted.

[1] Read before the American Orthopedic Association, September 25, 1891.

ORIGINAL LECTURE.

INCUBATORS—GAVAGE—INFANTILE SYPHILIS—HYSTERIA AND SPURIOUS WOMB-DISEASE—SCHUCKING'S OPERATION—OPERATION FOR LACERATED CERVIX WITHOUT ANESTHESIA—RECTO-VULVAR FISTULA.

A Clinical Lecture
Delivered at the Philadelphia Hospital, October 24, 1891.

BY BARTON COOKE HIRST, M.D.,
OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, AND PROFESSOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

I PRESENT to you this morning a premature baby, born at least two months before term, and in such a feeble

state that we had to supply it with artificial heat. There are several ways of supplying artificial heat for these premature babies, but it is best accomplished by means of a specially constructed apparatus called an incubator. The one you see here was devised by a Frenchman named Auvard. It is a rather cumbersome arrangement, and would hardly be available for private work, although for hospital-practice it is very good. We can keep an even temperature in this incubator at almost any desired height up to 100°. In the treatment of babies born very prematurely the temperature should be kept between 95° and 100°. This child, although born two months before term, became somewhat acclimated by exposure for a week or two after birth, and so when it was brought into the hospital and placed in the incubator with the temperature raised to 100°, it seemed to suffer from the heat, as it was constantly bathed in perspiration. We now keep the temperature a little lower than 90°, and in that temperature the infant seems to be comfortable.

In the management of premature infants it is occasionally necessary, in addition to supplying artificial heat, to see to an artificial ingestion of food. Such infants are too feeble to nurse in the usual way, and their food must be put into their stomachs. We do this by means of a rubber-tube passed into the stomach, to the end of which is attached a funnel, into which the mother's milk, in dram doses, is poured. This procedure goes under the technical name of gavage. We have had some difficulty in securing human milk for this baby, and were obliged for a while to resort to artificial feeding; during that time the infant went down hill rapidly, and, if we had not secured a woman whose breast could be milked, it would have died. When it first entered the ward it weighed three pounds. Its weight increased five ounces at first, but fell to two pounds and fifteen ounces on the artificial food. We finally found a woman who was willing to allow us to milk her breasts for the child, and the weight began to go up. Since yesterday it has gone up half an ounce; to-morrow I expect to find the weight again increased, and we shall look for a steady rise in weight until the child presents as healthy an appearance as we could expect in any infant born at the natural time and reared in the natural way. As to the results of this treatment in general: In a six months' baby we get successful results in about 22 per cent. of the cases. A six months' baby is, of course, an extreme instance. In a seven months' baby we get success in a larger proportion—in about 38 per cent. of the children. These statistics are from Paris. It seems to me that we obtain somewhat better results at this age than are obtained in the Paris hospitals.

Before dismissing this case let me call attention for a moment to the construction of the two incubators most in use at present. The principle of this incubator is simple enough, although its construction is somewhat complicated. It is a double wooden box, one within the other; there is a compartment for hot water within the outer box and beneath the inner box. The water contained in cans should be almost boiling and changed about every half-hour. Within the inner box—that is, in the upper compartment—lies the baby. We keep a thermometer lying inside, so that we can tell whether the temperature keeps steady, and the child is protected from the external atmosphere by a glass lid perforated by a chimney.

The second incubator I show you here is made after the German pattern, devised by Crédé, of Leipsic: it is simply a double-walled bath-tub of tin or copper, with a space about two inches wide beneath the walls for hot water, which is renewed every four hours.

If exposed to the sudden changes of the atmosphere these babies would almost surely die. Their vital processes are so feeble that they do not furnish a sufficient amount of body-heat to maintain cell-action. We carry about with us a normal temperature of about 98° and over, because there are within our bodies cell-activity and cell-combustion that furnish us with this temperature in spite of any external changes in the atmosphere.

In private practice a specially constructed incubator is not usually to be procured. The physician must supply the premature infant with artificial heat as best he can; consequently he does not get as good results as are obtained in hospitals. My plan in private practice is to put the baby in the bath-tub which has been provided for it, after filling the tub half full of cotton-wool. A mass of cotton-wool is then placed over the infant, leaving a space for respiration, and between the cotton and the sides of the tub are placed a number of medicine or beer bottles filled with hot water. In this way one can keep up about the child a constant high temperature, if the hot bottles are renewed frequently enough. It requires, however, the constant attention of the nurse or other intelligent person.

I present to you next a case of infantile syphilis that, unfortunately from the clinical teacher's point of view, has done so well that it is not half as good a case for demonstration as it was a day or two ago. The skin-eruption has improved so rapidly under treatment that the case is no longer typical. There is, however, enough left on the back to show something of the character of the eruption, and the improvement demonstrates the good results of the treatment. As you notice, there is in this case a trace of the syphiloderm on the soles of the feet and palms of the hands. This is a characteristic situation for syphilitic skin-affections in young children. When I first saw this infant a week ago it presented a much more characteristic appearance, and the efflorescence had a peculiar copper color. I found that the child had been treated by mercurial inunction, a very common plan of treatment, but without much benefit. In addition to this, mercury was ordered internally in the form of calomel, beginning with one-twelfth of a grain twice a day, and the improvement has been wonderful. We have a very good substitute for calomel in mercury with chalk, which is not so aperient. The success of treatment in this case justifies Henoch's assertion that, with the internal administration of calomel, specific eruptions in infants can be, so to speak, wiped off the skin as one erases a chalk-mark on a slate.

Here is a patient of a kind that you will often see in your private practice. She presents a form of disease in connection with which you must be on your guard against a very common mistake. I shall develop her history before you to show you how easy it would be to make a mistake in diagnosis if too much reliance be placed upon a woman's statements and beliefs when she is possessed with the idea that she has "womb disease."

I shall read you her history as I obtained it yesterday. About a year ago she found that she was unable to work as well as before. After a little while she found it impossible to go up and down stairs upon her feet, and she was obliged to go up and down sitting upon each step. After a while even this mode of locomotion became impossible, and she spent the whole day upon the lounge. After about three months of this sort of thing she felt something "rip in her back," and with this symptom she had a profuse dark discharge from the vagina. In addition to these symptoms she had a great deal of abdominal pain, worse when she attempted to walk, so that she went to bed and has been there ever since.

She has been under the care of physicians in her own home, a town in the interior of the State, who have "doctored her for womb trouble." So long as she was treated for the womb trouble she felt perfectly well, but was still unable to walk. So soon as the treatment ceased the pains returned. She described the pains as neuralgic, or as "stitching" pains, in the lower part of the abdomen. This is the history in the main that this patient presented to me yesterday, and it is a very typical history indeed, with one exception. In my experience these women usually have the name of some definite disease of the genitalia, the symptoms of which they may describe with surprising accuracy, or they believe themselves the subject of some peculiar and impossible disease of the womb; for example, I saw yesterday in consultation a woman who said that she had a tumor of the womb, six inches long and two inches wide, which her former physician, a homeopath, had been removing inch by inch.

On examining this woman before you, I find her genitalia perfectly normal, with the exception that her womb is somewhat undersized. It is, as you will have already recognized, a case of pure hysteria with imaginary womb disease.

When a woman goes to a general practitioner with such a history, he too often jumps to the conclusion that there must be some uterine or ovarian disease. His inability to find anything on vaginal examination is ascribed in his own mind to lack of skill in making a gynecological diagnosis, which he is afraid to confess. Or perhaps some slight abnormality is discovered that the physician honestly believes to be the cause of the woman's troubles. Finally, the physician may be an unmitigated rascal who trades on his patient's gullibility and too great readiness to believe anything that is told her about her womb or ovaries. In any case the unfortunate patient is treated by the introduction of the sound and by applications to the endometrium, until she very likely acquires some inflammatory process about the womb, which permanently impairs her physical condition and prevents the repair of her nervous system. My experience with these nervous women who present symptoms of uterine and ovarian disease—and it has been considerable in the Orthopedic Hospital and elsewhere—leads me to the conclusion that the majority of them have nothing abnormal in the genitalia, except often an ill-developed womb. It is an interesting fact that many a case of ill-developed nervous system will show ill-development of the genitalia as well. There is a minority, however, in which the hysteria rests upon a basis of disease in the pelvic viscera. These cases are most distressing. Their hysteria will not, as a rule, improve until the pelvic disease is removed, but an abdominal section is a peculiarly dangerous operation in such women. A large proportion of them die from shock and sepsis, even in the hands of the best operators.

Women like this one before you, if you inquire carefully into their history, will almost always give you an account of some grief, some nervous shock or strain. That was so in the present case. The nervous system lacks vigor and resisting power often by reason of bad training from childhood, often as the result of heredity. Nervous strains that you or I could bear, crush these inadequately equipped individuals. The balance-wheel of their nervous system is destroyed, and their nerves run riot. There is not one of us that has not the impulses, perhaps ill-defined, of these hysterical creatures, but our reason and will-power restrain them. Every woman's attention is attracted to the genitalia by the recurring menstruation and by slight symptoms of pain or discomfort at intervals, and every woman must have felt at moments that there might be something wrong in the genital region. These fears, however, a clear reason and a strong will dissipate. Not so with the hysterical woman. Her attention, once attracted to a possible ill, dwells upon it until the unreal becomes subjectively the real. It is not by treating the imaginary complaint, but by dealing with the fundamental disorder that such a woman can be cured.

I have a patient in the wards upstairs whom I would like to bring before you, but to do this is at present inadvisable, because she is suffering from chronic diarrhea, and I do not care to risk exposure to the cold, so I will simply describe the case. She is a woman who has a complete prolapse of the uterus, in addition to the chronic diarrhea, and perhaps as a consequence of it. When she goes about on her feet the uterus drops altogether out of her body, carrying with it the inverted vagina and the bladder. Operations for the relief of these patients have long been the opprobrium of gynecology. The plastic operations for the contraction of the vagina are often failures. The same judgment must be passed upon operations for shortening the round ligaments, and upon stitching the uterus to the abdominal walls. Moreover, this last procedure is distinctly dangerous, and therefore unjustifiable.

A woman can live indefinitely with a prolapse of the uterus. It is uncomfortable, even distressing, but not dangerous to life; therefore it is not right, in my opinion, to operate for this affection when the operation entails a certain risk of life, and by no means insures relief. The conscience of the gynecologist is apt to be callous on this point, so that he should guard himself with care against yielding to the temptation of performing abdominal section on too slight grounds.

Three years ago an operation was devised by Schücking for chronic retro-displacement of the womb. This operation consists in passing a thread into the uterine canal, through the anterior uterine wall at the fundus, and through the vaginal wall at the anterior vault. This is accomplished by a concealed needle, which I exhibit to you. You see the instrument is a hollow uterine sound with a good curve and a long handle. Within

the sound is the needle, which, being threaded, is passed to the fundus uteri within the sound, and is then pushed forward by this little catch on the handle until it comes into sight at the anterior vaginal vault. The thread that it carries is drawn out a little so as to make a loop, through which is passed the ligature-thread. The needle is then withdrawn, and the instrument removed from the uterus. The ligature-thread will then be seen with one end hanging from the anterior vaginal vault, and the other end coming from the os uteri. If these two ends were tied together the uterus would be pulled into a position of anteversion, and even anteflexion. There would, however, be considerable cutting of the cervix and vaginal mucous membrane by the ligature, which must remain in place several weeks. To prevent this, the ends of the ligature are each passed through a button, and then either clamped with a perforated shot or tied. It is well to remember that a clamp-shot will not hold a stitch if there is much strain put upon it. You can clamp a shot upon a silkworm-gut or a silk suture with all your force, and still be able to pull it off with the greatest ease. This operation has been done more than two hundred times (two hundred and seventeen at the last report) in Germany, and a few times in this country by one operator, Dr. Boldt, of New York. After a thorough trial, which has proved its efficacy in backward displacement of the uterus, it has been tried lately for prolapse of the uterus. Five women have been operated upon with perfect success. In one the uterus was exceedingly large and totally prolapsed. In two cases I believe the patients have been field laborers, and have resumed their hard labor after the operation without suffering a recurrence o the prolapse.

Theoretically, the "vaginal fixation" of the uterus, as it is called, would seem to be a rational treatment for prolapse. As long as the womb is held anteverted its descent through the vaginal canal is improbable. And, moreover, the fixation of the fundus at the anterior vaginal vault to the connective tissues between the bladder and uterus by adhesive inflammation would seem to be an additional safeguard against descent. Clinical results, however, constitute the crucial test, and I shall watch the outcome in this case with great interest. The operation that I propose to do in a day or two has not, I believe, been done before in this country. I shall report the result to you after sufficient time has elapsed to enable me to judge whether the prolapse has been permanently cured.[1]

Our next patient has heart-disease in the shape of mitral insufficiency; she has been suffering with bleeding piles, and has in addition to her other troubles a very badly lacerated cervix. The cervix is split to the vaginal vault on both sides, and there are present local and reflex symptoms that are often associated with this condition. I have had her under general treatment with digitalis, on which she has improved considerably, and I have treated the hemorrhoids with suppositories of tannic acid, iodoform, and extract of belladonna, and with the ointments of galls and belladonna in equal parts. The woman is very much improved; the heart has become stronger; the disturbance of circulation has been diminished, and the piles have been much improved. The cervix remains, of course, as it was.

I have determined to operate on the cervix without giving ether, as I am afraid of an anesthetic in view of the heart-disease. The woman is perfectly prepared to suffer a little pain. There are many hospitals in which this operation is always done without an anesthetic, as the cervix is an insensible part of the body, and can be "insulated," to use a Teutonism, as no other part of the body can be, without extreme pain. The operation for a lacerated cervix is easy to perform, and ought not to consume much time.

I have evolved a technique of my own in this operation, as everyone does after a little personal experience. It is as follows: The lips of the cervix are seized with double tenacula made after my own pattern, and are widely separated; the area to be denuded is then marked out with two or three strokes of a knife. This area is then denuded on both sides by a few clips with Emmet's scissors; the entire denudation is completed in about two minutes. The stitches are next introduced, beginning at the upper angles of denudation, using for this purpose stout semi-circular needles. The two stitches below on either side are inserted with straight needles. As a rule, six stitches are quite enough, but it is well to have ready two more in case the tips of the cervical lips need more accurate apposition. The ligatures of silkworm gut are clamped with perforated shot, and just before each shot is run home a stream of water from an irrigator is directed upon the wound. During the ten days that this patient will lie in bed we shall proceed with the treatment of her heart-affection, and shall endeavor to relieve her internal piles. We shall try to send the woman out of the hospital in just as good a condition as possible, and there is no reason why she should not live in comfort for a number of years, if she can avoid hard physical labor, and can find some suitable occupation as, for example, that of a seamstress.

I have devised the following plan for carrying my gynecological instruments. I keep them in a metal box, which, when taken apart, furnishes me with two metal pans, very convenient for the antiseptic solutions used in preparing the instruments for operation. In private practice, the most convenient antiseptic fluid is boiling water, which I use as an antiseptic whenever practicable.

[1] The operation was performed by Dr. Hirst in the gynecological ward, following the plan described in the lecture. The Schücking needle was passed into the uterine cavity concealed in its tube. The uterus, seized by a tenaculum, was drawn down toward the vulva and well backward; the needle was then pushed through the entire extent of the uterine wall at the fundus until it appeared in the vagina; the thread with which it was armed was seized and drawn out so as to make a loop by which to carry a stronger thread back again through the uterus; this being accomplished, the end projecting from the os uteri was threaded in a needle and passed through the anterior lip of the cervix. The operator then took two perforated plates of lead, about a half-inch in diameter, and, passing the threads through the perforations, clamped them with heavy shot. In this way the uterus was fastened at the level of the anterior vaginal vault in a position of extreme anteversion, and to some degree of anteflexion. It is to be hoped that the operation will prove a success, as seems likely to be the case, for the first step in the prolapse is always the retroversion of the uterus. After the long axis of the uterus is brought in coincidence with the long axis of the vagina the descent of the uterus follows easily. All that can be seen after the operation is a couple of lead plates, one in the anterior vaginal vault, and the other on the anterior lip of the cervix.

As I denude the cervix you will notice that the patient scarcely winces until I approach the vaginal vault, where the tissues are more sensitive. You notice that I leave at least a quarter of an inch of undenuded mucous membrane down the center of each lip, internally, so that the restored cervical canal shall be of good caliber. I was once obliged to artificially dilate the canal after an operation of this sort performed by another surgeon.

Care should be taken not to cross the stitches; if this should be done the circulation below will be cut off, the tissues will slough, and the patient might suffer serious consequences. Six stitches are enough in this case. The cervix, you will observe, is restored to its natural conical shape, and there is no longer a gaping of the lips, with the exposure of delicate mucous membrane, which was never intended to be subjected to the constant irritation of exposure to external influences.

The woman has stood this ordeal remarkably well. She does not complain of the pain of cutting and stitching, but of the dragging down of the uterus. The main reason for giving ether in these cases is to secure greater relaxation of the vaginal canal and outlet, so that the operator can work conveniently and to the best advantage.

The next patient I present to you is a woman who gives us a history very similar to that of the hysterical patient whom I have just shown you. She is a girl, twenty-two years of age, who complains of pain all over the abdomen and insists that her womb is out of place. She claims that at times it falls out of her body. She is firmly convinced that she is suffering from some uterine trouble. I made an examination yesterday and found that she had a slightly retroverted uterus of a rather infantile type. There never could have been the slightest degree of prolapse. She made such a fuss about the examination and held herself so rigid that it was impossible to find out just what was the matter, if anything, beside a slight grade of retro-displacement. She lies in bed all day, refusing to get up; she will not answer questions unless we insist upon it, and she has that peculiar vacant, sad, introspective expression that is characteristic of melancholic patients. Her mind is fully made up that she has serious uterine trouble. I will be able to tell you in a moment whether she has anything worth complaining of or not, as we shall anesthetize her. On etherization I find that there is not a thing the matter with this woman's pelvic viscera. Her uterus is slightly retroverted, but this condition makes no real difference, for the uterus is of the infantile type which, as I have explained to you in studying the other hysterical patient, is so frequently found in hysterical girls. This is a case of hysteria, and the woman should be sent to the wards for nervous diseases. These women come to the receiving-ward here and give a distinct account of womb trouble that deceives the hospital-physicians just as it often deceives the general practitioner.

This woman, if she had money, would very likely go from physician to physician to be treated for her imaginary womb trouble, until in consequence of repeated intra-uterine examinations and applications, she might in reality acquire a septic inflammation of the pelvic organs that would permanently destroy her health.

I next exhibit to you the result of an operation I did here two weeks ago for a recto-vulvar fistula, the result of a kick upon the vulva inflicted by the woman's husband. There was a tear an inch or more in length, running across the floor of the vestibule, the edges of which I denuded and sewed up. Union has occurred in the angles of the wound, but not in the middle. The wound burst open for some reason or other nine days after the operation. Up to this time all the feces passed by the bowels, but on the ninth day the woman complained that the feces were again passing by the vagina. When the resident physician came to remove the stitches he found only five of the seven that had been inserted; on inquiry, he learned that the patient herself had pulled out two of them. From this history I presumed that she had been pulling on the stitches and is herself responsible for the imperfect result, although she tells me that she did not interfere with the wound until she felt the feces coming through the vagina. This is the first time I have failed of success in an operation of this kind, although it is quite common not to get complete union in one operation for fistula, and so I do not feel discouraged. In cases of very extensive vesico-vaginal fistula I almost always expect to operate two or three times. There is a woman in the hospital on whom I operated for a vesico-vaginal fistula large enough to admit three fingers that had resulted from pressure exerted upon the vaginal walls by a pessary that had been allowed to remain in the vagina too long. The first operation secured about an inch of union; I operated again and secured half an inch more, and the third operation cured the woman perfectly. A short time ago I performed a like operation on a woman who had a very extensive opening into the bladder, the result of a mismanaged labor. She had been in labor some three days when the physician in charge applied forceps and used great violence in the extraction of the child, which was dead. The perineum was horribly torn, and a few days after labor the urine began to dribble through the vagina. There had been a slough of the anterior vaginal wall in consequence of the prolonged pressure of the head upon it. The cause of the difficulty was a rhachitic pelvis that had never been discovered. In this case I closed the greater part of the opening in the first operation, but shall be obliged to operate again to effect a cure. There are cases on record in which women have been operated upon some sixteen or eighteen times. It is a consolation to know that a cure can be secured in the vast majority of cases with patience and persistence.

In the present case, as some of you may see, there is but a small opening left in the center of the former tear, which does not compare in size with the original opening, and which I am convinced will be successfully closed by the next operation. I shall advise the woman to go about on her feet for a few days before again operating and confining her to bed. It is my custom after these operations to keep the bowels freely opened every day. This I did after the first operation and shall do again, as I am convinced that the results are better than by the old plan of locking the bowels up for a week or more with opium.

Professor Borgsiekiewicz, of Innsbruck, has been called to the Chair of Ophthalmology at Gratz.

CLINICAL MEMORANDA.

THE USE OF TOBACCO IN INTESTINAL OBSTRUCTION.

BY W. D. JONES, M.D.,
OF RISING CITY, NEB.

I HAVE searched the literature at my disposal to secure the most reliable information regarding the therapeutic uses and applications of that much-abused weed—tobacco.

Almost every author of a materia medica or therapeutics gives tobacco only a passing notice of its applications, usually followed by so positive assertions regarding its dangers that the average student and practitioner dismisses the subject with fear and trembling.

While it is evident that, like most of our drugs, this must be used very cautiously and with a thorough appreciation of its application to proper cases, it seems that a great deal of the danger feared from its employment is groundless.

My observation and practical experience in the therapeutic applications of tobacco have been confined to its employment in the treatment of strangulated omental hernia, hepatic and renal colic, and fecal impaction of the large bowel. Properly and judiciously employed, I consider it one of the most efficient remedies of a palliative character available by the practitioner for treating cases of fecal obstruction of the intestines.

In a former number of THE MEDICAL NEWS I have specified its application, assisted by gravitation, in the treatment of strangulated omental hernia, with the report of a case. To be of marked benefit, it must be applied *ad nauseam*. Owing to the depressing nature of the drug, it should not be employed in cases of young children or in delicate adults.

CASE I.—I was called in consultation to see Mary R., a stout, healthy girl of fourteen summers, suffering from fecal impaction of the large bowel, complicated with an overloaded stomach, the result of having eaten a large number of rather hard apples.

The child was first seen in convulsions, for which she had received the usual course of antispasmodics, with morphine to relieve pain and apomorphine to produce emesis, with no result. I suggested the use of a tobacco enema, made by adding half a dram of good plug chewing-tobacco to half a pint of boiling water. Owing to the urgency of the case, this was cooled as rapidly as possible, and the entire quantity injected by means of a Davidson syringe with a long rectal tube. The enema was retained for about twenty minutes, when we had the satisfaction of seeing our patient under the pressure of a double evacuation, followed by immediate relief. The patient's recovery was uninterrupted.

CASE II.—I was called one morning at an early hour to see a strong and healthy laboring man, about sixty years old, with the following history: He had not had a free movement of the bowels for several days, and had been doing some hard lifting during the previous day; the bowels were tympanitic, with severe enteralgia, palpation being impossible on account of pain and tenderness. I gave him large doses of morphine with atropine hypodermatically and by the mouth, with copious warm-water and soap enemata, with no result.

I then administered an enema of tobacco—of a strength of one dram to a pint of boiling water, and allowed to cool to a proper temperature—by means of a Davidson syringe and a twenty-six-inch rectal tube introduced to its full length. The patient commenced to experience some relief from pain in fifteen minutes, and to suffer somewhat from nausea. In twenty minutes from the time the enema was given there was a copious fecal evacuation, with immediate relief, followed by a quiet sleep. No further attention was required, and the patient was able to be up and about on the following day.

Should I deem it expedient to use this method in the treatment of a delicate individual, I would fortify the patient against any undue depression that might follow the remedy by administering an ounce or two of good whiskey, with a half-dram of the aromatic spirits of ammonia, a few minutes prior to giving the enema.

Instead of the ordinary Davidson syringe, I would suggest the use of a long rubber tube attached to a suitable reservoir placed at a height ranging from four to ten feet.

CASE OF PREMATURE LABOR WITH OCCIPITAL HYDRENCEPHALOCELE.

BY J. W. WILLIAMS, A.M., M.D.,
OF PATERSON, N. J.

MRS. T., twenty-five years of age, a primipara, pregnant seven months, was admitted to the Paterson General Hospital January 14, 1890. True labor-pains, strong and frequent, had already begun. The position of the child could not be ascertained by abdominal palpation. The fetal heart-sounds could be indistinctly heard a little to the left of the umbilicus. The mother's abdomen was unusually large. Vaginal examination detected the os dilated and the membranes protruding in "glove-finger" form. The presentation was found to be a breech in the left sacro-anterior position. Although uterine contractions were forcible and frequent, but little progress was made at the end of four hours. The membranes were then ruptured, the amniotic fluid in excessive quantity coming away with a gush. About twenty minutes later the breech descended, and soon the body and arms were delivered; but here progress ended. The after-coming head resisted all efforts to deliver by traction, notwithstanding the fact that flexion of the head was complete and the size of the fetus small. Finally, after stronger traction, there was a sensation as though something had given way. The head was delivered suddenly, with a gush of fluid, and the cause of the obstruction was seen. This was a tumor arising from the occipital region and hanging down on the back of the child. The tumor was about the size of the child's head, although a large part of the fluid contents had escaped from a tear made at its base by efforts to deliver, and it is inferred that originally the tumor must have been at least twice the size. The tumor was covered by integument; hairy on its upper half. Examination showed the greater part of the occipital bone and two upper cervical vertebræ lacking. Through this gap had protruded the tumor-contents, which consisted of the cerebellum and greater part of the cerebrum and cerebro-spinal fluid. The remainder of the bones of the cranium and face were well

developed. The fetus was kept alive for half an hour by artificial respiration. It weighed eight hundred grams and was thirty-two centimeters in length. The mother recovered well.

ANTIPYRIN IN WHOOPING-COUGH.

BY AMOS SAWYER, M.D.,
OF HILLSBORO, ILL.

IN an epidemic of whooping-cough, three years ago, I depended entirely upon antipyrin, and effected a cure in from ten to twenty days, the shortest time being seven days, the average fourteen. My plan was to try to anticipate the paroxysm of cough by administering the remedy every three or four hours during the day, at the onset, lengthening the interval as the disease subsided.

In an obstetrical case, a two-year-old child, suffering with whooping-cough, slept in a bed of its own in the chamber with its mother. I advised the removal of the child before the baby was born, as well as that it be kept away from the other children until the time of danger had passed. The mother thought such precaution unnecessary, and the child remained in the room. Twelve days after birth the baby presented symptoms of whooping-cough, and for a few days it seemed that it would die from the violence of the paroxysms. After the administration of antipyrin in anticipation of the attacks, however, they gradually lessened in frequency and severity, until at the end of two weeks they ceased entirely.

I have administered many ounces of antipyrin to patients from a few days old to adult age without having witnessed an untoward symptom, possibly because, if it does not produce the desired antipyretic effect after the second dose (10 grains, repeated in an hour if necessary), I discontinue its use; or because I have been fortunate enough to escape coming in contact with a patient possessing an idiosyncrasy in this direction.

MEDICAL PROGRESS.

The Heredity of Hemophilia.—LIMBECK (*Prager med. Wochenschr.*, No. 40, 1891) presents the genealogy of a family for four generations in illustration of the hereditary transmission of hemophilia. The disease was first observed in the great-grandmother, who lived to be seventy-five years old. At sixty, severe epistaxis set in and continued at short intervals until death. The great-grandfather evinced no tendency to hemorrhage. These two gave birth to three children—two sons and a daughter. Neither of the sons, and none of the four children of the elder son showed any tendency to hemorrhage. The daughter, on the other hand, at puberty, began to suffer with profuse and sometimes protracted epistaxis. As a result of her marriage, fourteen children were born. Four of these died in infancy and childhood and a fifth at sixteen. To the epistaxis of the mother was added profuse post-partum hemorrhage, and she died at fifty after hemorrhage from the genitalia, mouth, and nose. The oldest child, a male, and his three sons presented no manifestations of hemophilia. In the second child, a female, profuse hemorrhage from nose and mouth had taken place since puberty. Her only child, a male, had since fourteen had severe and frequent epistaxis. A third child, a male, had had slight hemorrhages in youth but not in later life. His child was free from disease. The fourth child, a female, like her mother had bled from nose and mouth since her twelfth year. She bore four children. The first, a male, and the second, a female, suffered from occasional, severe epistaxis; the third, a male, had severe and frequent hemorrhages from nose and mouth; the fourth, a boy of five, presented no abnormal manifestations. The fifth child, a female, had been a profuse bleeder since her fifth year; she had aborted three times and had no living children. The sixth child, a male, had had frequent hemorrhages, particularly from the nose, since his eighth year; his son, a year old, had had none. The seventh child, a female of twenty-seven, and her son, had no hemorrhage. The eighth, ninth, and tenth children were males and bleeders. The eighth had presented decided symptoms of hemophilia since his seventh year and died at sixteen, it was said of cerebral hemorrhage. The ninth child was a moderate bleeder until his fourteenth year, but subsequently was free from hemorrhage. The tenth had had profuse hemorrhages between his sixth and eighth years, when they temporarily ceased, but after an interval of two years recurred.

Removal of a Fragment of Steel from the Retina by means of the Electro-magnet.—THOMPSON (*Lancet*, October 24, 1891) has recorded the case of a blacksmith who was struck in the left eye by a fragment of flying steel. Both eyes soon displayed evidences of irritation, with considerable impairment of vision in the left. Ophthalmoscopic examination of the injured eye revealed the presence of a foreign body in the retina, together with slight exudation and hemorrhage, and a number of fine, opaque striæ in the vitreous body. The patient being etherized, the original wound was reopened and the curved pole of an electro-magnet was introduced and passed through the vitreous in a direction corresponding to that apparently traversed by the foreign body. The second application was followed by the appearance of the bit of steel "in tow" of the magnet. The small bead of vitreous that presented was snipped off, the eye was antiseptically irrigated, and a compress was applied. In the course of a short time the manifestations of irritation subsided and vision become improved, though a slight patch of opacity remained upon the retina, and the field of vision was correspondingly limited.

Combined Pylorectomy and Gastro-jejunostomy.—JESSETT (*Lancet*, October 24, 1891) has reported the case of a married woman, thirty-eight years old, who had borne six children, but presenting no family history of carcinoma or tuberculosis. For more than a year there had been vomiting at irregular times, and there was constipation. Pain, emaciation, and debility soon followed. Some eight months previously to coming under observation, a few days after a twin-labor followed by puerperal fever, a small tumor was detected on the right side of the abdomen. A diagnosis of pyloric obstruction of a malignant character was arrived at, and pylorectomy in conjunction with gastro-jejunostomy, by means of bone plates, was performed. The course of the case subsequently to operation was most satisfactory.

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Because:

1. *Chemical and pharmaceutical science and art have reached such perfection that it is now possible and even convenient to do so.*

In former times, in order to get the physiological actions and therapeutical effects of a drug it was necessary to give large doses, the essential principle being mixed with large quantities of neutral or alien matters. The impossibility or inconvenience, therefore, of carrying with one an outfit of medicaments sufficient to meet any emergency that might arise, differentiated the professions of medicine and pharmacy, and created a dependence of the physician upon the druggist that at the present time, and under changed circumstances, is working injury to the medical profession. It is to-day possible to carry in one's vest-pocket a supply of concentrated alkaloids and extractives of all the chief articles of the modern materia medica amply large and sufficiently varied to cope with all ordinary cases of disease that one may be called to see. Pharmacological science has of late made wonderful progress, and the richness and diversity of the elegant preparations made by the best laboratories excite genuine surprise and praise. To hand the patient the day's supply of these marvellous little triturates, discs, pellets, tabloids, or alkaloids, is less trouble than to write a prescription.

2. *It saves the patient money and trouble.*

And why should we not desire to do this? To the vast majority of patients the question is one of great importance. The druggist's bill is doubtless small enough, but it is often unnecessary. Not only the very poor, but even those not poor, feel sufficiently the loss of time and labor incurred in the course of any illness; the worry and care are poignant enough without the unnecessary addition of the apothecary's charge. The interests of patient and doctor are closer than those of doctor and apothecary, and our solicitude for the patient may reasonably be extended to such pertinent things. The sacrifices of loved ones for their sick constitute one of the most pathetic of the many things that touch the heart of every sympathetic practitioner. It is but the simplest duty to spare them a useless addition to the burden.

The druggist must charge about the same for the filling of a prescription either for a small or large quantity of medicine. In acute diseases one kind of medicine is required for but a few doses, when a change is demanded. There is a rain of new prescriptions, much expense and trouble is caused the patient, and the accumulation of bottles of unused medicines produces malevolent suggestion and discontent. All this is different when the day's supply is given with the day's visit. The plan also adds but the slightest amount, or none at all, to the physician's expenses. These preparations are almost absurdly cheap. Even if no additional charge be made, the increased practice resulting would fully compensate the little and temporary increase of professional expense.

3. *The ordinary character finds it hard to pay for simple advice.*

The average person, and even many of the best of our patients, feel some resentment when called upon to pay for advice pure and simple. In matters non-professional everybody is so more than willing to give everybody else the article wholly gratis, that to many it seems like impertinence to ask payment even for the medical variety. The quack, with his unrivalled scent for the foibles of human nature, has profited by this fact, and even if he give only smells and oceanic dilutions of an essential principle, the medicine, or supposed medicine, is given—*with* the advice, and the patient is grateful for getting *something* for his money. Among

the little things that, as causes of professional success, we in our short-sightedness are prone to overlook, this little factor has doubtless been wondrously effective in biassing the minds of many patients for so-called homeopathy. Placebos and imagined therapeutics form the essential element of many a hoary and tattered medical joke, and the corresponding psychological fact must be well-rooted in human nature. It therefore obtains that even if no more worthy and weighty reason existed, one might gladly throw this innocent sop to Cerberus. But, happily, better reasons do exist.

4. *In emergency cases and in severe forms of acute disease time is saved and the disease more effectually withstood by the immediate administration of the needed remedy.*

Every practitioner knows that in many cases greater promptitude in the administration of the medicine would be a decided gain in the control of the disease. Doubtless many a critical stage has been passed in which life might have been saved had the needed drug been at hand and immediately given. The trip to the pharmacist and the *de novo* preparation of the compound by him (already prepared and in a hundred forms already present on the druggist's shelves!) waste valuable time. In country practice, especially, this is a very important consideration.

5. *The accidents of prescription-writing and of prescription-filling are lessened, while at the same time (with proper care and watchfulness over laboratory preparations) the efficacy and physiological effects of drugs are assured.*

It needs no mention of the self-evident fact that if prescriptions are not written, there will be no mistakes made in writing them, in reading them, or in compounding them. The frightful accidents almost daily happening, the sorrow, and the medico-legal misery consequent thereupon, would not exist. A physician would hardly make a blunder in giving the drug himself, and the possibility becomes almost *nil* when we recollect that the dose is parcelled out and labelled in the pharmaceutical workshop and with an accuracy unapproachable by the apothecary.

It would follow, that to have trustworthy assurance of standardization, solubility, etc., the medical profession should be able to certify to its members the preparations of certain manufacturers as reliable. At present there are a number of manufacturers whose products are beyond suspicion. A plan should be agreed upon by the two interested professions whereby the desired guarantee could be given, watchfulness secured, and the dangers of commercial avarice averted.

There would necessarily follow—and indeed, it should long since have been routine—that medical students should be instructed in the values and varieties of these preparations, and before graduation should become entirely familiar with them. The elder teaching of materia medica, the medieval pottering over botanical and laboratory trivialities must give way to civilized ways, and to the *knowledge of the use of finished products.* The pharmacologist and the chemist are noble allies and helpers, but they are not physicians, nor, if excelling in their work, have they time to be. Neither has the clinician the time to do their work. The professions are henceforth different. As to the drugs he uses, it is now no more requisite that a physician dig the roots and herbs, or execute the thousand chemical and pharmacological manipulative details required in the perfection of his preparations, than that as to his knives and forceps he should dig the iron, smelt and temper it, and learn the thousand technical details of the instrument-maker's art. With its infinite differentiation of function, civilization has rendered all this useless. The physician's task is to intelligently use the instruments (triturate, tablet, alkaloid, or surgical knife) furnished him by his friends and allies, the chemist, the pharmacologist, and the instrument-maker. If these shirk their duty there are speedy and effective ways of punishment.

And if commercialism is suspected of bribing the teacher, that too will come to a righteous ending.

6. *It will lessen the evils of hospital abuse, drug-store doctoring, the system of druggists' commissions to physicians, and of counter-prescribing.*

There can be no doubt that the wretched hospital-abuse—that encouraged parasite that is sucking the life-blood of his foolish host—is largely a product of this unnecessary exaggeration of the mechanics of treatment. Doctor and druggist are, in combination, "too much for" many poor souls that can so easily escape the charges of both by the debauching charity of their sentimental pauperizers. The young practitioner thus denied his legitimate *clientèle* by those who should be his helpers, may take a hint. He will secure the gratitude of his patients and increase their number by dispensing his own medicine.

The drug-store doctor can thus legitimize his

ways, and instead of turning his prescription over to his clerk to collect the fee by a double charge for the drug, he may charge for advice *with* medicine and not be ashamed to look at himself in the mirror.

"Division of the spoils" by druggist with doctor —more common, alas! than we like to know—would thus be checked, and probably the sponger of medical advice would get ashamed to pester the druggist and the soft-hearted physician.

It may perhaps be said that the plan is nowadays beneath the dignity of the aristocratically inclined modern physician. If that be the sole argument against it, the answer would be brief and pointed: Dignity to the dogs! The physician that in such matters thinks first of his dignity is a square peg in a round hole. He is out of touch both with his countrymen and with his fellow-practitioners.

It is by no means contended that the plan advocated can have an absolute and unexceptional realization. Judgment must modify all hard and fast rules. In cities where competent pharmacists and full supplies are close at hand, it may be preferable to continue the older method. But the city is a small part of the Country, and those desiring to adopt the plan suggested, may feel every warrant of good reason to justify their practice of it. It is both good morals and good medicine.

THE LESSON OF A MALPRACTICE SUIT.

The plaintiff in a suit for malpractice brought in the Philadelphia courts has been non-suited, and in order to bring out the moral of the story, we give some of its details:

On March 15, 1889, the plaintiff visited a market in West Philadelphia, and, accidentally stepping on a knife, the point was thrust through the tendo Achillis. She immediately summoned Dr. A. F. Chase, who, finding a narrow punctured wound with but little separation in the tendon, and no bleeding, carefully dressed the parts, with the foot extended so as to relax the gastrocnemius. Thinking that the case might get into the courts, Dr. Chase asked Dr. O. H. Allis to see the patient five days after the accident. The wound was then healed, with evidence of separation of the tendon of about a quarter of an inch.

The butcher before whose stall the accident happened was anxious to make all reasonable amends, offering to pay the woman for lost time and to meet the necessary expenses of the injury. This was not satisfactory, and suit was accordingly entered against him. Before the suit could be brought to trial he sold out his business and left for parts unknown.

The plaintiff then consulted her lawyer with reference to bringing suit against the market company. This, he assured her, would be useless, and, finding that suit was to be brought against the attending physician, the lawyer gave up the case.

About this time the plaintiff, desirous of getting outside medical testimony, engaged a carriage, was driven to a well-known hospital, was carried tenderly into the "out" surgical department, and, after the examination, was again carried tenderly back to her carriage, having, as she thought, gained some important medical testimony as to what would have been proper treatment of the original injury. She also engaged the hospital surgeon to attend her at her home. Unfortunately for her, but quite the reverse for the defence, it was observed that in the evening of the same day the plaintiff was seen to leave her home and walk to a neighbor's, apparently as if nothing had happened to her.

Fortified with additional medical testimony, counsel was again employed, and action brought against Dr. Chase in March, 1890. Witnesses were subpœnaed and every preparation made for the trial, but for some reason the case was continued. Again in April it was on the list, and again deferred, and finally, in October, 1891, the plaintiff was non-suited for non-appearance.

The point to be emphasized is one that occurs in nearly all suits for malpractice. Physicians hear and credit the statements of the plaintiff, and then freely state what should have been done at the time of the injury. Upon the testimony of the hospital surgeon the plaintiff felt she had a good expert witness, but when he learned the facts of the case, as presented by two competent medical witnesses, his remarks to the plaintiff were recognized as untrue and unjust, and their retraction would be necessary in open court. There is no doubt that the plaintiff learned that she could not depend on the surgeon of the hospital, and this fact, together with the difficulty she had experienced in getting another physician to serve her purpose, caused her to abandon the case.

It is to be regretted that medical men are so free to talk about cases of which they know nothing—

so free to mention their own successes in similar cases—so free to state what would have been the result had another course been pursued.

Had the butcher stood fire, there would have been no action against anyone else; but when both butcher and market company failed the plaintiff, then somebody else must be found that would not run away. The physician had then to suffer the annoyance of a suit, which, as in this case, though resulting in his favor, has always an annoying and even damaging effect.

DR. RHOADS'S METHOD OF LENGTHENING TENDONS, NERVE-TRUNKS, AND BONES.

IT has often happened that a discovery once made has been re-made by another, independently and at a later date. The classic example of this is the oft-quoted instance of DARWIN and WALLACE wholly unknown to each other, working out the same great theory of natural selection. In surgical procedures another illustration of the same fact has lately come to our notice. About three years ago Dr. J. NEELY RHOADS, of Philadelphia, hit upon the plan of lengthening contracted tendons by cutting transversely half through the tendon, then longitudinally to any desired extent, and finally finishing the division by cutting through the remaining half of the tendon on the side opposite that on which the original transverse incision was made, and at a point longitudinally removed from it. The desired lengthening of the tendon could thus be accurately determined and limited by allowing the severed longitudinal halves to slip on each other so far as wished, and these could then by sutures be fixed in position until healing took place. DR. RHOADS was prevented from performing this operation three years ago by his patient being suddenly seized with typhoid fever, and dying. The ingenious plan was explained to a number of surgeons at the time. DR. O. H. ALLIS at once adopted it as a commendable operative procedure, advised it to his classes at the Jefferson Medical College, and has a number of times successfully performed it.

Without knowledge of the above facts, on November 29, 1890, PROFESSOR W. W. KEEN, acting upon the suggestion of DR. WEIR MITCHELL, carried out the operation in a case of post-hemiplegic contraction of the flexors of the fingers.

The original plan of DR. RHOADS was not to limit the method to tenotomies, but he recommended, and still suggests, that it would be of equal service in lengthening nerve-trunks, and *especially* in lengthening bones, when, for instance, one leg is shorter than its fellow.

The method is so ingenious and of such possible usefulness that we desire to call especial attention to it, as also to do justice to the original discoverer.

It may be worth remarking that this method of operation may possibly be of service in strabismus operations, and would be a more accurate and a preferable method of performing "graduated tenotomy" of the external ocular muscles, if "graduated tenotomy" have any usefulness whatever.

When only a slight amount of lengthening is desired, the following modification of the method was also suggested by DR. RHOADS: Transverse incisions are made half way through and on opposite sides of the tendon, but not exactly opposite each other, leaving without complete division certain longitudinal fibers in the center to slip on each other, and thus gaining a slight addition to the entire length of the tendon.

CORRESPONDENCE.

CINCINNATI.

Advertising in the Newspapers; Quacks and Quackery; Prescribing Druggists; the Hospital Abuse; Diploma-mills; Cranks.

SELDOM does a ripple of excitemeut disturb the tranquillity of the staid old medical profession of Cincinnati. Everything goes as it comes, and little notice is taken of passing events—except by the daily papers. In this matter we are unfortunately becoming quite metropolitan. Few important surgical operations escape full description in the newspapers, and many quite trifling affairs occupy more space in their description than would be required to cover their *locus in quo*. The older men are displayed in the operations which they perform, and the young men who have not the operations appear in lengthy interviews upon diseases that, on occasion, they are eminently qualified to treat. Unfortunately, again, men worthy of emulation have been thus victimized by the press. One of our leading surgeons who positively and persistently refused to permit a reporter to witness an operation, and has always pursued this course, was maliciously and meanly attacked by one of those pests of journalism—a cheap evening paper.

One newspaper undertakes to tell the medical profession why they should advertise as do the "quacks." Well, it generally requires a lifetime for the average newspaper reporter—and the editor, too, if proprietary interests are concerned—to learn the distinction between an honest, humane physician and the blood-thirsty abortionist who so materially aids the worthy cause of debilitated journalism by cash contributions for squares and editorial comment. Hence the profession aforesaid cannot wonder at disinterested advice coming from such sources.

Owing to the ridiculously lax laws for the regulation of the practice of medicine in Ohio, this city has become the refuge—from adjoining States—of the "irregulars" of every description, and our profession complacently watches the sport. Quack follows quack, each remaining until his name and methods become familiar; then he silently steals away, or moves to another part of the city and begins business under another name. It is not probable that any effective legislation could be secured under present management. The retail druggists are far ahead of us in this regard. They not only regulate themselves, but dictate to the wholesale dealers, and would gladly assume the management of the entire medical profession of America. An effort was made a few months ago to render it unlawful for a physician to dispense his own remedies. Yet the vast majority of Cincinnati druggists prescribe indiscriminately and boldly. Quite a number of them also prepare and advertise their proprietary remedies—especially their sure cures for venereal diseases.

Fully 2000 persons are treated daily, free of charge, in our hospitals and free dispensaries. Yet of all this clinical richness, less than a tenth is in any manner utilized for the good of humanity, if we except that small but important part of humanity directly connected with the institutions referred to. There are still a few practitioners who have not become identified with hospitals or dispensaries, hence it is difficult to predict the future of clinical medicine; but to a casual observer it appears that we have a surfeit of medical charity.

Diploma-mills are just now attracting attention. The proverbial disagreement between knaves revealed at least one source of bogus diplomas, but it is doubtful whether any real good will come from the exposure. The title of the mythical institution was the Medical University of Ohio. Under this dignified name it holds a charter from the State. Proceedings are now pending to revoke the charter; but this measure will probably result in greater secrecy or a change of name. No punishment short of imprisonment will arrest the operations of these swindlers.

We have other chartered institutions whose standing is questioned. The American Eclectic College is not recognized by the Illinois State Board of Health. The College of Vitapathy is an institution which licenses its graduates to practice medicine, solemnize marriage, and otherwise monopolize the rights of the learned professions. Christian scientists—the so-called metaphysicians—have their victims, and there is an anomalous sect whose goddess is a woman alleged to impersonate the Saviour. She receives money and prayers, and cures by the laying-on of hands. Other concerns are believed to exist that either publish or act as agents for bogus diplomas, but they are fairly secure under the charters that they hold. Wisely did Plautus exclaim: "Little do you know what a gloriously uncertain thing the law is."

THE TRANSMISSION FROM PERSON TO PERSON OF DERMATITIS DUE TO RHUS TOXICODENDRON.

To the Editor of The Medical News,

Sir: For many years I was unaffected by the rhus poison, and assisted folks to rid their gardens of that pest by pulling the vine up root and branch, but in 1880 I was infected by the *rhus radicans* whilst clearing out my cemetery lot. The points I desire to note are these:

1. After leaving the cemetery, on my way home, having washed my hands thoroughly, I dressed the arm of a lady having a Colles fracture, and two days thereafter the eruption appeared on my arms and hands. The next day I saw the patient, *and she had the rash out fully*. A gynecological case seen on the day of my inoculation showed the same effect three days afterward, yet neither of these women could have gotten the trouble other than through myself.

2. Friction of the skin through the clothing at points far from the affected localities developed the rash soon thereafter, showing the disorder to be systemic as well as local. This I repeatedly found true.

3. Treatment prior to the eruption showing itself in those known to have been exposed does not appear to delay or prevent the attack.

4. I have found freshly home-made lime-water the best local application, and fluid extract of jaborandi and iron the preferable internal remedies. The jaborandi I consider a specific in this trouble.

In my own case, as a result of innumerable experiments, I found galvanism the best agent for relieving the excessive itching, but very great care must, of course, be taken in applying electrodes, by thorough washing and the use of absorbent cotton (to be thrown away) to prevent transfer to other victims.

Of all the *anacardiaceæ*, the *rhus pumilum* is the worst in its effect as a poison; the *rhus radicans* is the next, and the *rhus toxicodendron* the mildest, the *rhus venenata* being so infrequent a toxic agent as to merit little notice. No matter how severe the infection about the face, I never knew the eye to be injured, even when the lids were swollen to an immense size.

I called attention to some of these facts in a short paper in the *Philadelphia Medical Times*, in September, 1880.

Very truly yours,

Wm. R. D. Blackwood, M.D.

246 North Twentieth Street.

[We have received quite a number of letters from practitioners describing numerous instances of the transmission from person to person of the poison in question, but as the cases are mostly repetitions of the fact, with slightly varying circumstances, it is not thought necessary to publish a number of the letters. The Medical News, however, would express its recognition of the courtesies of its correspondents. Dr. Cantrell's report has served to bring out and emphasize a new or somewhat unknown clinical fact of considerable importance.—Ed.]

WASHINGTON AS A MEETING-PLACE.

To the Editor of The Medical News,

Sir: As a Kentuckian, I am supposed to carry on my journey a corkscrew and such other agencies and antidotes as shall best serve to protect me against the dangerous effects of water-drinking. As a Southerner I am presumably a semi-salamander, while my hot-bread-three-times-a-day dietetics (old Virginny style) will, I am sure, shock the esthetic table-habits of the Northern-*bred*. Since coming home from the Congress, sick, I

have read everything you have published in regard to the supposed cause or causes of the diarrhea that so many of us had. I am surprised at the opinion that the fault lay in the food. Men who revel in a high-game club diet and the like at home, went down under plain cooking there, while, irrespective of instances, it may be suggested to those who seem to have forgotten, that if bacteriology teaches anything, it is the efficacy of cooking as a sterilizing procedure. The afternoon of the second day I walked with several others from the Grand Army Hall to the Shoreham. We were hardly able, from prostration and a sense of suffocation, to make the final diagonal crossing at the hotel-corner. On interrogating the thermometer in the drug-store, it was found to register but a paltry 86°; this to one accustomed to live and labor in a summer atmosphere of 98° seemed inexplicable, but a question promptly answered by the single word *humidity* cleared the matter at once. In my opinion, humid, hot air from the Potomac flats, bearing disease-germs in its relaxing and prostrating blasts, despite studied abstemiousness on the one hand or vinous inclinations on the other, seems to have been the cause of the trouble. Speaking of eating and drinking at the Congress, Dr. Battey Tuke said to me: "I have attended all of the great Congresses and Associations of the world, and I have never seen so little junketing and so much work. I have learned more here than at any meeting I have ever attended."

E. R. PALMER.

LOUISVILLE, KY.

"THE PROTECTIVE" IN ANTISEPTIC DRESSINGS.

To the Editor of THE MEDICAL NEWS,

SIR: Dr. Benjamin's estimate of the value of the protective in wound-dressings, published in THE MEDICAL NEWS, October 31st, was interesting.

By those who favor its use it is said that this portion of the dressing assists, through its adhesive quality, in keeping the fresh edges of the wound approximated; and that by the same quality, when thoroughly sterilized, it excludes germs that necessarily persist in the deeper portion of the surrounding field from finding an entrance to the wound itself.

That such a result is obtained is very questionable, and that the protective does shut in the slight, unavoidable exudate and furnish an excellent culture-medium is equally unquestionable.

I am convinced that some form of protective is useful in addition to the ordinary dry, antiseptic, absorbent dressing, and for some years I have employed one that is familiar to surgeons in this vicinity as well as to others of your readers, I presume.

A single narrow strip of gauze—bichloride, iodoform, or what you please—is laid over the incision, giving a border of half an inch about the cut and stitches; over this is laid a thin strip of sterilized, absorbent cotton, with its border, in turn, one inch outside of the border of the gauze. The edges of the cotton are thoroughly pasted down with contractile collodion, the middle being left dry for the escape of exudate. By this simple contrivance the first purpose of the more familiar protective is admirably served—that is, the wound edges are well supported. Whatever virtue there may be in the tissue protective for excluding germs is certainly attained by the collodion dressing, with the advantage that the medium about the wound is less rich in fresh exudate.

The outside dressing of gauze and cotton is applied in the usual manner. Yours,

JAMES G. MUMFORD, M.D.

197 BEACON STREET, BOSTON.

HYPODERMATIC INJECTIONS IN DIPHTHERIA.

To the Editor of THE MEDICAL NEWS,

SIR: THE MEDICAL NEWS of some weeks back gave a report of Professor Seibert's treatment of diphtheria by injections of aqua chlori beneath the diphtheritic membrane. Some description was given of the peculiar syringe used.

I wish to report a use I have made, with considerable success, of the Seibert syringe, to wit: The employment of this syringe for the injection of strychninæ sulphas into the pharyngeal muscles in post-diphtheritic paralysis. Ten minims of a one-grain-to-the-ounce aqueous solution were injected daily.

The hypodermatic use of strychnine in this form of paralysis is, of course, a common measure; but the peculiar adaptability of the *Seibert syringe* for this purpose, and my own experience with it, prompt me to send this communication. Respectfully,

WM. S. BARKER, M.D.

ST. LOUIS, MO.

TOPICAL APPLICATIONS IN DIPHTHERIA.

To the Editor of THE MEDICAL NEWS,

SIR: I have found the following to be an efficient application in the treatment of diphtheria. It can be employed in all stages of the disease, without danger to the patient. It should be applied often and thoroughly, by means of a brush or cotton swab, until the diseased membrane entirely disappears. In connection with this remedy I give as much brandy as the patient will bear, and such other remedies as may be indicated.

℞.—Acidi borici	ʒj.
Acidi lactici	fʒj.
Glycerini	fʒjss.
Aquæ dest.	fʒijss.
Liq. ferri subsulph. . . .	fʒjss.—M.

This solution may be used in full strength or diluted with water, as each case may require.

Yours truly, GEORGE W. PECK, M.D.

OMAHA, NEB.

IDIOSYNCRASY.

To the Editor of THE MEDICAL NEWS,

SIR: An editorial in THE MEDICAL NEWS of November 14th, entitled "Idiosyncrasy," recalls to my mind an interesting case. In the spring of 1890 a young lady, after eating a fried codfish-cake, was seized with cholera morbus, extreme dyspnea, and an intolerable itching of the whole cutaneous surface. Some six hours afterward a general urticaria developed. The symptoms were intense for two days and mild for three days more. The mother said that some years before, the daughter, during convalescence from one of the diseases of childhood, had experienced a similar attack, but of milder degree,

after eating codfish-steak. Three weeks after the attack in which I saw the girl the mere odor of cooking fish induced a mild recurrence of the attack. Three months later she again became ill from smelling fish, since which time (now over a year) she has had no similar trouble.

Willoughby I. Wood.

Brooklyn, N. Y., Nov. 16, 1891.

REVIEWS.

A Manual of Hypodermatic Medication: the Treatment of Disease by the Hypodermatic or Subcutaneous Method. By Roberts Bartholow, A.M., M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia; Honorary Fellow of the Royal Society of Edinburgh; Honorary Member of the Société Médico-Pratique de Paris; Fellow of the College of Physicians of Philadelphia, etc.; author of a Treatise on the Practice of Medicine; of a Treatise on Materia Medica and Therapeutics; of a Manual of Medical Electricity, etc. Fifth edition, enlarged and revised. Pp. 529. Philadelphia: J. B. Lippincott Company, 1891.

The many pupils of Professor Bartholow, that have been guided by his teachings through the difficulties of medical practice will be gratified to learn that, since laying aside the cares of professorial work, he has been devoting his energies to a careful revision of his various works, so as to give to the profession the results of his careful scientific observations, his mature reflections and judgments. The present edition, the fifth, of his work upon hypodermatic medication is the first of the series to appear. In its enlarged and revised form it will be cordially welcomed by those that are familiar with the methods of hypodermatic treatment advocated in previous editions, since it contains a complete but well-digested summary of the existing state of knowledge in this department of therapeutics. There is no similar work that covers the same ground so thoroughly or so satisfactorily.

As stated in the preface, the book has not only been revised, but has also been enlarged by the addition of nearly two hundred pages of new material. All of the modern drugs that have been employed hypodermatically have received more or less consideration in proportion as they have been found therapeutically valuable by thoughtful clinicians. In recasting this edition, Professor Bartholow has arranged the remedies in accordance with the scientific classification adopted by him in his work on materia medica and therapeutics, and which is based upon their physiological actions; while objections may be urged against this classification, it is, nevertheless, on the whole, the best that has as yet been suggested, and if carefully studied will afford a clear insight into the true actions of drugs, their antagonisms and therapeutic uses.

Some thirty pages are devoted to a sketch of the history of hypodermatic medication; to a consideration of the methods employed in the administration of a remedy, to its local and systemic effects, to the characters of syringes and needles—small details in one sense, and yet upon their due appreciation depends the success largely of this form of treatment. Under each heading will be found the best methods of preparing drugs, and the various formulæ which have been found most efficacious, not only by the author but by clinicians throughout the world. The physiological effects which follow the injection are stated in a clear, concise, and thorough manner. The physiological antagonisms of drugs, a subject that Professor Bartholow has particularly elucidated, is explicitly pointed out. The therapeutical indications for the employment of the remedies by the needle are numerous and their value attested by the author's own vast experience and by references to the published experiences of other thoughtful observers.

As an illustration of the compleness of this edition, it may be stated that 20 pages are devoted to a consideration of mercury and its salts; 17 to iodine; 22 to pilocarpine; 13 to antipyrin; 71 to morphine; 73 to atropine and its combinations with morphine, physostigmine, and pilocarpine; 10 to hyoscyamine and hyoscine. It is unnecessary to mention the space devoted to the remainder of the drugs; suffice it to say that each receives careful consideration. Altogether it is the best work in the English language pertaining to this subject, and one that should be in the possession of every physician who wishes to be abreast of modern therapeutics.

Artificial Anesthesia and Anesthetics. By De Forest Willard, A.M., M.D., Ph.D., Clinical Professor of Orthopedic Surgery in the University of Pennsylvania, etc., and Lewis H. Adler, Jr., M.D., Instructor in Rectal Diseases, Philadelphia Polyclinic and College for Graduates in Medicine. 8vo., pp. vi, 144. The Physician's Leisure Library. Detroit: George S. Davis, 1891.

This little volume is a creditable *résumé* of our knowledge on the subjects with which it sets out to deal. Anesthesia and anesthetics are considered from all points of view and in all their various phases in a clear, concise, and orderly manner. Not a little value attaches to the work from the fact that the conclusions reached are based upon a not inconsiderable experience on the part of one or both of the authors. As is natural, those methods are commended as the best with which the operator has had the largest experience. The skill acquired by repeated manipulation makes the more familiar procedure the safer. The fact implied in these statements is exemplified in the selection of either ether or chloroform as the anesthetic. Of ether it is said that "it is the safest known agent for the production of prolonged narcosis." The conclusion of the Hyderabad Commission that "chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil," is held to be "a somewhat sweeping assertion." The fact that we wish to emphasize is that either chloroform or ether is comparatively safe as an anesthetic in the hands of one who is skilled in the use of the one or the other, and that the chances are that the surgeon will use that with which, by accident or association, he has become most familiar.

The book is well printed, the typographical errors few and unimportant. It can be profitably read by all that are interested in the subjects of anesthesia and anesthetics.

Minor Surgery and Bandaging, including the Treatment of Fractures and Dislocations, Tracheotomy, Intubation of the Larynx, Ligation of Arteries and Amputations. By Henry R. Wharton, M.D. Philadelphia: Lea Brothers & Co., 1891.

Dr. Wharton has written a book especially designed for students and younger practitioners, superior in many respects to others on this subject. The portions of it devoted to bandaging and fracture-dressing are particularly good. Full and accurate verbal descriptions of the mode of applying all the important bandages, and of the best modern methods of treating and dressing fractures and dislocations, are supplemented and rendered still more valuable by a number of excellent illustrations, most of them new. These have been photographed from life, and, with the improved methods now employed for reproducing such figures in a form suitable for book publication, they combine the advantages of clearness of outline and accuracy in portraying the various turns of the bandages they represent. Thus the methods of application of the various dressings are rendered more easy of comprehension than by verbal description.

The part of the work devoted to a description of the different substances and materials used in antiseptic dressings and operations and the mode of their preparation seems also excellent.

Among the descriptions of the various procedures employed in minor surgery, we hope, in a second edition, to see more special reference made to the treatment of felon, onychia, etc. A few words upon the drawing of teeth might also find a useful place in the book.

A complete index of fourteen pages, containing over 700 terms, brings the size of the book up to 497 pages.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D., Clinical Lecturer on Obstetrics in the Jefferson Medical College; Professor of Obstetrics and Diseases of Children in the Philadelphia Polyclinic; Visiting Obstetrician to the Philadelphia Hospital; Physician to the Children's Department of the Howard Hospital; Member of the American Gynecological Association. With one hundred and forty illustrations, two of which are colored. 8vo., pp. 298. Philadelphia: P. Blakiston, Son & Co., 1891.

Books upon obstetrics have so largely multiplied that one may reasonably doubt if any immediate necessity existed for additions to the number. Good books, however, are always welcome, and will be given cordial reception. In this class belongs the manual of Dr. Davis, of which it is to be said that, though concise, it is clear in expression and accurate in statement. Within narrow limits a great range of subjects has been discussed with admirable skill and precision. The text makes easy and agreeable reading. The utility of the work is greatly enhanced by a large number of excellent illustrations. The descriptions of some of the plates might advantageously have been inserted. By an apparent inadvertence the list of illustrations is not paged; it would be well if the list of plates were also paged. The book may be cordially recommended to those who do not desire to use the larger and more voluminous works on obstetrics.

Handbook of Materia Medica, Pharmacy, and Therapeutics, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription-writing. By Samuel O. L. Potter, A.M., M.D. (Jefferson), M.R.C.P. (Lond.), Professor of the Theory and Practice of Medicine in the Cooper Medical College of San Francisco, etc. Third edition, revised. Philadelphia: P. Blakiston, Son & Co., 1891.

This, the third revised edition of Dr. Potter's most praiseworthy work, is a compendious compilation of the subjects with which it has to deal, arranged in a convenient manner and provided with a complete index that makes reference easy. The articles of the Materia Medica are arranged alphabetically, the pharmacology, physiological action, and therapeutical application of each being concisely given. A section is devoted to pharmacy and to the art of writing prescriptions. The section on Special Therapeutics comprises a list of clinical conditions alphabetically arranged, with the remedies recommended for each. The appendix contains a good deal of useful information on a wide range of subjects.

The work should prove useful as an aid in the study of a subject that is at best not easily comprehended.

Essentials of Bacteriology. By M. V. Ball, M.D, Phiadelphia: W. B. Saunders, 1891.

We can cheerfully recommend this little volume as containing an excellent condensation of recent bacteriological teachings, presented in a lucid style. The faults of the work are minor, and pertain principally to the arrangement. One objection we feel we should note: The method of drying cover-glass preparations. Thorough air-drying is of such importance in the proper homogenization of the matter spread on the glass, that the neglect of it causes more failures in staining than any other error, and it is bad advice to suggest drying over a Bunsen flame, even though the student be cautioned against excessive heat.

The amount of material condensed in this little book is so great and so accurate are the formulæ and methods, that it will doubtless be found useful as a laboratory hand-book.

Physicians' Ready Reference Account Book. Arranged by Gideon C. Segur, M.D. Pp. 300. Hartford, Conn.: The Plimpton Manufacturing Co., 1891.

This book is admirably adapted to take the place both of the visiting list and the cumbersome ledger of the physician. A single line on any page is sufficient to convey the desired information as to charges, credits, and balances for one month; charges and credits being entered in black and red ink respectively. Space is economized, as it is possible, if desired, to enter several accounts on the same pages.

The last fifty pages are devoted to short accounts, an extra column being here added for previous charges. In these accounts reference is facilitated by indexing the page and line. The book is, in short, as its name implies, a ready reference account book, the plan of keeping the accounts being of such a simple character

that a knowledge of bookkeeping is unnecessary. It is of convenient size and bound in half morocco. The price, $3.50, is moderate.

Obstetrical Nursing. A Handbook of Obstetrical Nursing for Nurses, Students, and Mothers. (Comprising the Course of Instruction in Obstetrical Nursing given to the Pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia.) By Anna M. Fullerton, M.D., Demonstrator of Obstetrics in the Woman's College of Pennsylvania; Physician-in-Charge and Obstetrician and Gynecologist to the Woman's Hospital, etc. Second edition, revised. Philadelphia: P. Blakiston, Son & Co., 1891.

The simplicity of style and direct method of teaching are sufficient in themselves to recommend this little book. The matter contained in it necessarily presents little that is new, and the arrangement of the book differs in no respect from that of similar handbooks.

The chapter, however, on the Care of the Newborn Infant is clearly, as the writer states in her preface, "up to the present standard of our knowledge." This chapter is carefully arranged, and the tables descriptive of the analysis of human milk, the rules of feeding, and the various formulæ for the preparation of artificial food are of great value for their clearness and the opportunity they offer for comparison.

In the preface to the second edition the writer cites the usefulness to the physician, the nurse, and the patient, of her work. In attempting to meet such varied wants she has undertaken a serious task, but a careful study of the succeeding pages will convince the reader of the success which has attended her efforts in this respect.

The careful training and the unusual advantages for observation in this branch, and the natural insight into the requisites of good nursing on the part of the writer, contribute to make this the standard text-book on this subject.

NEWS ITEMS.

Insanity, Blindness, and Deaf-Mutism in Vienna.—At the end of 1890 a census was taken of the population of the Austrian capital, which showed that it contained 1,380,917 inhabitants, being an increase of rather more than 23 per cent. as compared with the enumeration made ten years before. The proportion of the sexes was 51.63 per cent. of females to 48.37 per cent. of males. The number of persons suffering from mental or physical infirmity was 3964, of whom 983, or 24.8 per cent., were blind; 980, or 24.7 per cent., were deaf and dumb; 1627, or 41.04 per cent., were idiots or insane; and 374, or 9.44 per cent., were cretins. Of the whole number, 53.13 per cent. were males, and 46.87 per cent. were females. The excess of males as compared with females, however, holds good only as regards cases of deaf-mutism, insanity, and idiocy; the cases of blindness are equally distributed between the sexes, and as regards cretinism, the fair sex leads easily, the respective percentages being 39.3 males to 60.7 females. On comparing these figures with those of the census of 1880, it will be seen that while blindness has diminished by nearly 10 per cent., and deaf-mutism has remained stationary, insanity and cretinism have increased by 32 per cent. This increase is greater in the female sex than in the male, in the proportion of 43.02 to 23.2 per cent. Of the 983 blind persons, only 21, or 6 per cent., were born blind; the causes of the condition are said to have been blennorrhea neonatorum (in 14 cases), smallpox (in 11), other affections (in 295), and injury (in 17). Of 381 deaf-mutes not inmates of public institutions, 127, or 33.3 per cent., became deaf and dumb after birth. Of the cretins, 63.4 per cent. are between ten and thirty years of age, and 31 per cent. can do ordinary household work.—*British Medical Journal*, August 29, 1891.

Mortality According to Occupation.—At the recent Congress of Hygiene and Demography, Mr. Ogle presented statistics as to the comparative mortality among those between twenty-five and sixty-five years old engaged in the various occupations in England. The death-rate among clergymen being the least, this was taken as a standard of comparison. The following table presents the comparative mortality:

Clergymen	100	Wool-workers	186
Gardeners	108	Armorers	186
Farmers	114	Tailors	189
Husbandmen	126	Hatters	192
Papermakers	129	Printers	193
Grocers	139	Cotton-workers	196
Fishermen	143	Clerks	199
Cabinetmakers	148	Physicians	202
Lawyers	152	Quarrymen	202
Brushmakers	152	Bookbinders	210
Mechanics	155	Butchers	211
Tradesmen	158	Glassmakers	214
Woollen-drapers	159	Plumbers, painters, etc.,	216
Miners	160	Cutlers	229
Shoemakers	166	Brewers	245
Commercial travellers	171	Omnibus-drivers	267
Bakers	172	Wine-merchants	274
Millers	172	Bass singers	300
Upholsterers	173	Potters	314
Masons	174	Miners	331
Smiths	175	Hotel-waiters	397
Laborers	185		

Tuberculosis in German Prisons.—Cornet (*Zeitschrift für Hygiene*, x, 1891) has estimated that, in the past fifteen years, 45.82 per cent. of all deaths among males, and 49.33 per cent. among females, in prisons, were due to tuberculous disease. Below the age of twenty there was no material difference between the death-rate from tuberculosis among prisoners and that among the ordinary population; but between twenty and forty the death-rate was five times as high among prisoners as among the general population. Some of this excess is attributable to insufficient exercise and ventilation, and to want of variety in food. Another cause lies in the probable infection of cells by tubercle bacilli, insufficient care in disinfection being observed. In a considerable proportion of cases of tuberculosis in prisons the disease had existed prior to the incarceration, as is shown by the number of deaths from tuberculosis during the first few months of imprisonment.—*British Medical Journal*, October 24, 1891.

Vital Statistics.—According to the *Financial and Insurance Chronicle*, the yearly number of deaths throughout the world may be estimated as thirty-three million. Upon this estimate, there would be 90,410 deaths per day, 3767 per hour, and 62 per minute. The average duration of life is computed as thirty-eight years. A fourth of mankind dies before seven; a half before or at seventeen. One person in ten thousand lives to be a hundred years old; one in five hundred to be ninety; one in one hundred to be sixty. The life of the married is longer than that of the unmarried. Of a thousand persons that have lived to be ninety years old, forty-three were engaged in religious or political pursuits; forty in agricultural pursuits; thirty-three were artisans; thirty-two soldiers; twenty-nine lawyers or engineers; twenty-seven professors, and twenty-four physicians.

The Philadelphia Polyclinic and College for Graduates in Medicine has arranged a course of evening lectures, to be given by the members of the teaching corps on Tuesday and Friday evenings of each week, at eight o'clock, in the new Polyclinic Hospital, Lombard Street, above Eighteenth Street: Nov. 24, Dr. Edward Jackson, The Shadow Test; Nov. 27, Dr. B. Alexander Randall, Ear Diseases in General Practice; Dec. 1, Dr. S. D. Risley, The Diseases of the Choroidal Tract; Dec. 4, Dr. John B. Deaver, The Operative Treatment of Head Injuries; Dec. 8, Dr. Henry Leffmann, Recognition of Albumose and Peptone in Urine; Dec. 11, Dr. Edward P. Davis, The Use of the Forceps; Dec. 15, Dr. Henry Leffmann, Determination of Sugar and Urea in Urine; Dec. 18, Dr. S. D. Risley, The Diseases of the Choroidal Tract; Dec. 22, Dr. John B. Roberts, Fractures of the Elbow; Jan. 5, Dr. J. Henry C. Simes, Syphilis; Jan. 8, Dr. Lewis H. Adler, Jr., The Physical Exploration of the Rectum; Jan. 12, Dr. Arthur Van Harlingen, The Contagious Diseases of the Skin—Their Diagnosis and Treatment; Jan. 15, Dr. John B. Deaver, The Radical Cure of Hernia—Umbilical, Inguinal, and Femoral; Jan. 19, Dr. J. Henry C. Simes, Syphilis; Jan. 22, Dr. H. Augustus Wilson, The Mechanism of the Normal Foot with Reference to the Correction of Deformities; Jan. 26, Dr. Arthur Van Harlingen, The Antiseptic Treatment of Skin Diseases; Jan. 29, Dr. Lewis H. Adler, Jr., Congenital Malformations of the Rectum and Anus; Feb. 2, Dr. E. P. Davis, The Treatment of Delayed Labor.

Department of Midwifery of the New York Post-Graduate Medical School.—Mrs. C. P. Huntington has given the directors of the Post-Graduate Medical School $2000, a sum sufficient to defray the expenses of the midwifery department for one year. Professor von Ramdohr will have charge of the department, at No. 543 East Thirteenth Street, where instruction in obstetrics will be given to graduates in medicine only.

Nothnagel, of Vienna, recently celebrated his fiftieth birthday. A number of his pupils, including Rosenbach, v. Jaksch, Bamberger, and Kogerer, presented him with an album containing their photographs.

Professor v. Hippel was recently awarded the Welz Prize for his work on *A New Method of Transplantation of the Cornea*.

New York Pasteur Institute.—During the first six months of the second year of its existence (February 18, 1891 to August 18, 1891), 415 persons, bitten by dogs, cats, and other animals, applied at the New York Pasteur Institute for treatment.

In the case of 345 of these persons, it was demonstrated that the animals attacking them were not mad. Consequently the patients were sent back after having had their wounds attended to during the proper length of time. In 70 cases the anti-hydrophobia treatment was applied, hydrophobia of the animals inflicting bites having been evidenced clinically, or by inoculation at the laboratory, and in many cases by the death of some other persons or animals bitten by the same dogs.

Indigents have been treated free of charge.

In but one case did death occur after the treatment had been carried out.

The Vision of Sailors.—The city of Lübeck has adopted the practice of the city of Hamburg, of systematically testing the eyesight of sailors, especially as regards color-vision.

The German Dermatological Association will hold its next congress in September, 1892, at Vienna, under the chairmanship of Kaposi, in conjunction with the Second International Dermatological Congress.

Professor S. Exner has been made Professor of Physiology in the University of Vienna.

Dr. Julius Dreschfeld. who for ten years has been Professor of Pathology in Owens College, London, has been nominated for the Professorship of Medicine, to succeed Dr. Morgan, who has resigned.

Professor Gustav Edlefsen has resigned the chair of Internal Medicine in the University of Kiel, to take up his residence at Hamburg.

Dr. J. West Roosevelt, M.D., has been elected Professor of Clinical Medicine in the New York Post-Graduate Medical School and Hospital.

Professor R. v. Mosetig recently assumed direction of the surgical department of the Vienna General Hospital.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 21, 1891.

WOOLVERTON, THEORON, *Medical Inspector*.—Placed on the Retired List, November 13, 1891.

BRYANT, P. H., *Assistant Surgeon*.—Detached from Coast-survey Steamer "Gedney," and wait orders.

JONES, W. H., *Surgeon*.—Ordered to examination preliminary to promotion.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

THE RADICAL TREATMENT OF UTERINE CANCER.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

IN uterine cancer, if the vagina is not implicated, if the disease has not travelled along into the broad ligaments, and if the womb has not been fixed by adhesions, the immediate and remote success attending the operation of the removal of the womb is an extremely satisfactory one. The averages of immediate and permanent recovery compete most successfully with those of the excision of the breast for cancer. Thus, of 311 cases of vaginal hysterectomy performed up to the end of 1886, compiled by A. Martin, 47 died from the operation, giving a percentage of 15.1 per cent. Individual operators have done better than this, Leopold having lost but 4 of 80 vaginal hysterectomies, and Staude 1 of 22. On the other hand, of 778 cases of excision of the breast collected by Koester, the immediate mortality reached 15.6 per cent.

These figures, however, do not afford a basis of legitimate comparison between the immediate success of the two operations, because vaginal hysterectomy is a young operation, and every known case of extirpation of the womb for cancer is given. It therefore includes the earliest operations, performed long before the technique had been improved; whereas the operation for the removal of the breast has been accepted from time immemorial, and its technique has been long perfected. As regards permanent success, cancer of the breast is discovered earlier and is therefore operated on earlier, while cancer of the womb is rarely discovered until it has so far advanced as to have insidiously implicated contiguous and continuous structures. Even when it is discovered, being seated in an unseen organ, its dangers are not realized, and operative interference is liable to be postponed. Hence one would infer a larger measure of permanent success in mammary cancer. Yet, from personal statements lately made to me by several German operators that have become more expert, and who are now more careful in the selection of their cases, I am thoroughly convinced that the removal of the uterus *per vaginam* for cancer far surpasses in its remote, or permanent, success not only all other operations for cancer of the womb, but also all operations for cancer in other parts of the body.

Nor need we wonder at this success, because the lip, breast, penis, and rectum, which are the favorite sites of cancer, are integral parts and parcels of the body, while the womb is to the body only an appendage, which is merely suspended by stays and guys, and those of a different material.

This opinion is substantiated by the remarkable statistics of the Dresden Klinik brought up to date (*Medical and Surgical Reporter*, November 21, 1891, p. 834; from *Archiv für Gynäkologie*, Band xl, Heft 2). In these Leisse presents a tabulated statement of the histories of all of the patients, so far as they could be obtained. These histories are compiled with great care. Of 80 patients that were heard from upwards of two years after the operation, 56.25 per cent. were still living. As 8 of the deaths were not due to a recurrence of the disease, the actual mortality was only 17.8 per cent. Thirty-seven of the 45 surviving patients were examined at the klinik, so that there was no question as to their local condition; and in the other cases reports were received from competent physicians. The following are the facts: Of 80 patients examined over two years after the operation, 45 were free from recurrence; 58.6 per cent. (of 58 patients examined) were well after three years; 59.5 per cent. (of 42) after four years; 60 per cent. (of 30) after five years; 66.6 per cent. (of 9) after six years; and the 2 patients that had survived the operation seven years were perfectly well. The best showing, however, is by Leopold, who states that out of 76 of his cases remaining under observation after recovery, 72 were still well, without recurrence of the disease, from one to five and a half years after the operation.

Undoubtedly the general consent of gynecologists has fixed upon the vagina as the best channel through which the womb should be extirpated, whether for cancer, for incurable prolapse, or for fibroid tumor, provided the womb is not unduly enlarged—that is to say, provided the womb is small enough to be delivered through the vagina and vulva. But the same unanimity does not exist with regard to the technique of the operation.

Some surgeons, at the head of whom stand Péan and Richelot, secure the broad ligaments, either in sections by several catch-forceps, or, as a whole, by a single clamp on either side. Many, perhaps the majority of American gynecologists, have adopted

this mode of procedure, and there is hardly one, not excluding myself, who has not invented a special form of clamp. This is usually a more rapid mode of operating, and the clamps are kept on only from forty-eight hours to three days; but it has its objections. First, the ends of the clamps, or the beaks of some of the forceps placed higher up, must protrude into the peritoneal cavity of the pelvis, which therefore cannot, as in the other operations, be closed above them, so as to make the stumps extra-peritoneal; consequently, from the breaking down of the tissues in the bite of these instruments, the pelvic and intestinal peritoneum is liable to be infected by putrilage. Again, the large, open channel between the abdomen and the vagina invites contamination of the contents of the former. Further, the obstruction of the vagina by the presence of such bulky instruments makes the removal of the more remote tubes and ovaries difficult, if not in some cases impossible. Finally, as Mundé observes: "They are said to produce sloughing and adhesions of intestines and omentum to the edges of the wound, and hence we believe many operators who formerly employed them have returned to the use of the progressive silk sutures." (*Diseases of Women*, p. 586.)

The objections to the progressive silk ligatures are, in my opinion, less grave, and they are as follows: When applied to the short and dense stumps of the broad ligaments they are liable to slip off. Then, again, it is true that while by their use most of their knots and the included portions of the broad ligaments can be made extra-peritoneal by closing the roof of the vagina above them, some of the knots of the upper ligatures will usually lie in the peritoneal cavity. Consequently, as one of each of the free extremities of the silk ligatures must not be cut off, but be left long, in order to facilitate their ultimate removal, there will be a liability of capillary drainage along these ligatures from the dirty vagina into the peritoneal cavity. This invites blood-poisoning, or, what is not uncommon, local abscesses, because the knot, which may hang on for three or four weeks, becomes converted into a septic foreign body.

Now, catgut ligatures are not open to these objections. If applied fresh from the alcoholic solution in which it is kept, and unmoistened by water, catgut swells up immediately, and binds more firmly than before the tissues around which it is tied. It is therefore, in my opinion, less liable to slip off than is silk. I have, indeed, never known a catgut ligature to slip, even when applied to the short and thick broad ligaments of a fibroid tumor, and to its very large bloodvessels, which have to be tied during the operation of supra-vaginal hysterectomy. Then, again, in vaginal hysterectomy the catgut ligature has this very great advantage over the silk ligature, that every ligature, high or low, can be cut off close to its knot. Hence, those knots left in the abdominal cavity are not only absorbable, and therefore less likely to become foreign bodies, but by the sewing up of the wound in the vaginal roof, also by catgut, they are cut off from the vagina and therefore from vaginal contamination. Lastly, all the extra-peritoneal ligatures will take care of themselves by absorption, and do not need, weeks after the operation, repeated vaginal examinations and repeated tugs before they can be dislodged.

The technique that I now prefer to follow is a blending of what seems to me to be the best points in Martin's and Olshausen's operations. The cervix is first thoroughly curetted and afterward charred by Paquelin's thermo-cautery. The funnel-shaped excavation is next stuffed with iodoform gauze, and its lips are sewed closely together by a continuous suture. These precautions are taken to prevent contamination of the peritoneum from any uterine leakage. The vagina now gets a thorough cleansing with soap and water, and is swabbed out with a 1 : 1000 mercuric chloride solution. The woman being placed in the lithotomy position, and the vagina opened by a short duck-bill speculum and two retractors, the cervix uteri is seized with a double tenaculum forceps, dragged downward and forward, and Douglas's pouch opened. Aided by the forefinger of the left hand in the opening, quilted sutures of catgut, with intervening spaces between them, are passed, uniting the edge of the peritoneum to that of the posterior vaginal wall. In proportion as the incision is prolonged on either side up to the insertion of the broad ligaments, additional sutures are put in. The object of these is to stop all hemorrhage and to prevent the stripping off of the peritoneum during the subsequent manipulations. To protect the peritoneal cavity and to keep the intestines from protruding, a sponge or a roll of iodoform gauze, to which a strong thread is attached, is pushed up into the pelvic opening. To distinguish this thread from the numerous other ligatures, a small piece of gauze is tied to its free extremity. The cervix being now dragged backward and downward, a transverse incision is made across its anterior surface above the os, and the bladder is stripped off with finger and knife-handle until the peritoneum is reached and opened. Here again quilted sutures are introduced to unite the peritoneum to the anterior vaginal wall.

By means of two aneurism-needles curved to the right and to the left, successive portions of the broad ligament on each side are tied and cut off from the womb; but the free extremities of the ligatures are, for the time being, left uncut. As the womb is thus gradually freed, it descends lower and lower,

until, all its attachments being severed, it is extirpated. Sometimes this can be greatly facilitated by either retroverting or by anteverting the womb, and delivering its fundus either through the posterior or the anterior vaginal incision. This manœuver is brought about by the fingers in the anterior opening pushing the fundus backward, or *vice versa*. The fundus is then seized and drawn out by forceps, or it is hooked out by the old obstetric crotchet, which has served me in good stead. Two fingers in the rectum will also give very material help. By this forward or backward displacement, as the case may be, the broad ligaments get a half-twist upon themselves, which not only narrows their width, thus lessening the number of ligatures needed, but which also places their upper and most distant portions within easy operative reach. Whenever possible, the ovaries and tubes should also be ligated and removed, because those organs are the next ones most liable to be attacked in progressive cancer of the womb and may already contain cancer-germs, and because the woman should not be subjected to the annoyance of the now needless function of menstruation.

When the womb has been extirpated, the sponge tampon is removed, the free extremities of all the ligatures on the left broad ligament are seized with the left hand, and the stump on that side is drawn down below the level of the opening in the vaginal roof. To keep it in this position, it is sewed by one or two through gut-sutures to the corresponding extremity of the incision. The same thing is done to the right stump, and all the ligatures are cut off close to their knots. I ought to have said that before this the ligatures—say those on the tube and ovary—lying too high to be made extra-peritoneal, are first cut off close to their knots. A strip of iodoform gauze for drainage purposes is now pushed up into the pelvic cavity through a small opening left in the vaginal roof, and the vagina is loosely packed with iodoform gauze. On the third or fourth day the bowels are moved, and after that both strips of the iodoform gauze—the drainage strip and the vaginal tampon—are removed. No kind of vaginal douche should be used for at least a week, and then only with great gentleness, for fear of tearing open the newly united parts.

When the vulva and vagina are ample, and the womb is not much enlarged, this operation is an easy one. But when opposite conditions exist, such as will be found in aged women, and especially in old maids, the operation is a very difficult one. It may, indeed, have to be abandoned, or be completed only by a resort to abdominal section.

Within the last six weeks I have three times performed the operation, in each case using catgut sutures. In two of the cases the operation was quite easy. In the third it proved tedious from senile narrowing of the soft parts, and from enlargement of the womb through cancer of its endometrium. In each the convalescence was so uninterrupted and so prompt as to be a surprise to me. The absence of all constitutional disturbance, the freedom from pain, and the ability of the patient to turn from side to side at will, were in striking contrast to the ordinary features of an abdominal section.

Some years ago, before the days of vaginal antisepsis, I removed by vaginal hysterectomy, using silk ligatures, two wombs affected with cancer. One woman died within four days, from the operation itself. The other perished within the year from a rapid return of the disease. Greatly dissatisfied with the immediate and remote results of this operation, I abandoned it. But very recently, indeed, after watching German operators and German statistics, I have become a zealous convert, and I now do not hesitate to assert that in vaginal hysterectomy we have a most potent weapon against a most deadly disease.

THE ETIOLOGY OF CHANCROID.[1]

BY R. W. TAYLOR, M.D.,
CLINICAL PROFESSOR OF VENEREAL DISEASES AT THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

IT is to-day clearly proved and very generally believed that the chancroidal ulcer does not depend upon a specific virus of its own, as was formerly claimed, and that, while a chancroid may be, and very commonly is, derived from a previous chancroid, a chancroidal bubo, or a chancroidal lymphangitis, it may also originate in pus derived from irritated lesions of syphilis and from irritated simple lesions in syphilitic subjects, and from various forms of simple pus, particularly when originating in active and intensely irritated lesions, and in some persons may develop *de novo*.

After the clear distinction between the chancre and the chancroid had been drawn by Bassereau in 1852, and Clerc in 1854, great efforts were made to establish the claim that two distinct viruses existed, namely, the syphilitic and the chancroidal. There was no difficulty in establishing beyond controversy the fact of the existence of the syphilitic virus, but it was otherwise concerning the *contagium vivum* of the chancroid. But ingenious reasoning, misrepresentations, and misapplications of facts surmounted the difficulties of the occasion, and by many it was considered as proved that such a morbid entity as the chancroidal virus actually existed. Thus was promulgated the doctrine of dualism, the simplicity of which was so striking that it gained quite general

[1] Read before the Section of Genito-urinary Surgery of the New York Academy of Medicine, November 12, 1891.

acceptance. But there were those that could not see anything mysterious and specific in the chancroid, and who, by means of experimental inoculations and clinical studies, threw doubt upon the existence of a specific virus for the chancroid. In this connection I may, I hope, without immodesty claim that the labors of Dr. Bumstead and myself had much to do with the inauguration of the era of light that prevails to-day. We felt that a dictum like the following, though emanating from so high an authority as Fournier, and adopted in this country by Van Buren and Keyes, should be proved to be false. It is as follows: "Chancroid is an affection perpetuated only by contagion; sexual intercourse is not essential. Wherever upon the human body a chancroid is found, there has been deposited pus from another chancroid under conditions favorable for its absorption. No amount of sexual excess, no degree of uncleanliness, no irritation, traumatic or chemical, however prolonged; no simple or poisonous ulceration from other specific sources (syphilis, cancer, glanders, etc.)—nothing, in short, can produce chancroids except chancroids (chancroidal bubo included). So that, as Fournier puts it, if all the patients in the world with chancroid would avoid contact with others until their malady got well, the disease would cease from off the face of the earth." As I have said before, by means of intelligent investigation, experimental and clinical, it was proved beyond a doubt that ulcers having all the features and peculiarities of the chancroid could be produced by many different varieties of pus, the chief essential being the activity of the ulcerating process from which the pus was taken.[1] Thus then the chancroid was deprived of its dignity as an essentially virulent ulcer and relegated to the position of an indifferent affair of hybrid and heterogeneous origin. It was to be hoped that a flood of light would be thrown upon the question of the nature of the chancroid by modern bacteriological science and research, but these fond hopes have not been fully realized.

De Luca and Ducrey have each claimed that they have isolated and cultivated a microbe that is the morbid agent in the production of chancroid; but their results are discordant, and they failed to establish a clear scientific claim. If my reading is correct (and I have been careful and painstaking), the general sentiment among those who study bacteriology is that the chancroid is the production of pus that contains the staphylococcus pyogenes albus and aureus, and perhaps the streptococcus. In fact, the chancroid bears the same relation to the mucous membranes that ecthyma and impetigo bear to the skin. So that we may state the case in this way: Chancroid is produced by pus rich in pyogenic microbes. In this thesis clinical observation and microscopy are in accord, the former proving that intensity of inflammation is necessary, and the latter that the pus is extremely rich in pyogenic microbes.

Though the profession at large is quite fully acquainted with the essential facts as to the nature of the chancroid, there are many points involved in its clinical history that are still not clear.

In very many cases chancroids are derived during sexual intercourse, one party being affected with this active form of ulceration. This form of transmission of the disease is well and generally known. It is transmission by direct descent. But it must be clearly understood that chancroids may be found on the penis of a man, and that examination of the woman with whom he cohabited may show her to be free from these lesions. In other words, it is not safe to say to a man suffering from chancroids that the woman with whom he cohabited undoubtedly had chancroids. This will be well shown by the following case:

A healthy young man, free from syphilis and gonorrhea, came to me with a rosary-like series of seven chancroids in the balano-preputial sulcus. He was surprised at the information that he had chancroids, and asserted that he was positive that the woman with whom he had cohabited had no such trouble, to which I readily assented, and I explained to him how chancroids might originate. Examination of the young woman on the following day showed that she was free from syphilis, and that her genitals were not the seat of disease, but that in the os uteri there was a deep fissure covered with a highly ulcerated surface, and surrounded by much hyperemia. From this lesion a profuse brownish, gelatinous pus escaped. The woman gave the following story: Seven years before, she had had a child, and had since thought that she was not quite right in the womb, having had exacerbations and remissions of leucorrhea. Four weeks before, she was obliged to go to bed in consequence of what was called peritonitis. Three weeks later, after getting out of the sick-bed, her lover (who had been such, and her only one for years) and she resumed their amorous embraces in a very vigorous manner, supplemented with unlimited wine, the result of which was the chancroids in himself and much pelvic pain in his consort.

In this case a discharge that had previously come from a subacute form of inflammation was, in consequence of the peritonitis and excess, transformed into a more active form of pus. Every source of error in this case was carefully eliminated.

This and many similar cases have clearly convinced me that many cases of chancroid are developed through non-syphilitic women in whom, owing to various causes, an exacerbation has taken place in

[1] For details see Bumstead and Taylor on Venereal Diseases, Introductory Chapter. Philadelphia, 1883.

some lesion of the genitals that previously was innocuous, and which then gave forth an active form of pus.[1] It follows, therefore, that we should be guarded in the cases of suspected wives and mistresses as to what we say to husbands or lovers that are unlucky enough to become affected with ulcers of the genitals in intercourse with the former. Otherwise much harm may be done, and innocent women may be cruelly wronged.

It is far from uncommon to observe chancroids in a man contracted in intercourse with a syphilitic woman who has no specific lesion of the genitals, but who suffers from a purulent vaginal secretion. In these cases the simple inflammation of the syphilitic woman gives issue to pus rich in pyogenic microbes. This again is an illustration of the statement that men may gain chancroids from women whose genitals are free from these lesions. I have many times, by means of confrontations, conclusively convinced myself of this mode of origin of chancroids, which was first brought into prominence by Morgan, of Dublin, in 1871.

Then, again, I have seen many instances in which men have cohabited with impunity with women the victims of an old and extinct syphilis, but who suffered from chronic chancroids. In these cases the ulcers had become old and inactive, and they had ceased to secrete a dangerous pus.

Now, then, I come to a portion of this subject concerning which there is a widespread want of knowledge in the minds of medical men.

Chancroid being classed as a venereal disease, the physician instinctively thinks that a given ulcer that is presented to him must of necessity have originated in sexual contact. In many cases this supposition is not correct, for chancroids may originate in some subjects *de novo*. In other words, it is not very uncommon to see chancroids in men who have had no sexual exposure whatever, such lesions being perhaps due to some inherent peculiarities of their tissues, to some diathetic condition or to debility, or to some contamination with particles of dirt that have lodged upon their genital organ. This mode of origin of the chancroid is well shown in the following two cases in which herpetic lesions became transformed into actively destructive chancroids. Such cases are far from rare, and if the practitioner will carefully interrogate the patients that come to him suffering from chancroids he will in many instances find that there has been no exposure within the time required for the development of these lesions, and he will convince himself beyond all doubt that the ulcerative lesions are due to some unknown source of contamination of herpetic vesicles, of chafes, abrasions, or fissures. I have among my notes many cases illustrating the origin of chancroid in all of these lesions and traumatisms. The chancroid in these cases is simply an evidence of wound-infection, and is really a septic ulcer.

Many years ago, when the doctrine prevailed that a man or woman having upon his or her genitals or elsewhere a chancroid must of necessity have contracted that ulcer from some other person afflicted with chancroid, a gentleman, aged twenty-nine, came to me whose case and history much puzzled me. He had had gonorrhea several times, but had never been infected with syphilis. He was fat and plethoric and claimed that he had never been sick for a day in his life (suffering from clap excepted). He showed on the inner side of the prepuce a lesion one-third of an inch in diameter, that without hesitation I pronounced to be a chancroid. The soft, yellowish, worm-eaten surface and base, the undermined edges, the peculiar secretion, and the halo of inflammatory redness produced a picture so characteristic and typical that my assertion was emphatic. But the gentleman insisted that he had not had any intercourse for a month and that he had been informed that chancroids appeared within a very few days after coitus. My reply was that he had a chancroid and that in some unexplained manner he had been contaminated with chancroidal pus. He claimed that this was impossible, and said that under similar circumstances he had had precisely similar ulcers, which, by a number of eminent surgeons and syphilographers in some of the largest cities of America and Europe had in each instance been unqualifiedly pronounced to be chancroids. For a number of years this man came to me with these ulcers. In some instances they appeared so soon after coitus that chancroidal infection seemed probable as a cause, while in others no sexual intercourse had been indulged in for several weeks prior to their appearance. Repeated careful questioning convinced me that this gentleman was the victim of persistently recurring herpes progenitalis, and for a long time it was a mystery to me why in some instances the vesicles dried and their surfaces healed promptly, and in others they became transformed into unhealthy ulcers that could not be distinguished from classical chancroids.

Whether in this case there was a tissue-peculiarity I am unable to say. The patient was seemingly in robust health; yet it seemed to be his lot to suffer (as I know now) from the ravages of pyogenic microbes that, in some unexplained manner, so persistently attacked his excoriated vesicles.

The following case is even more remarkable:

A gentleman, thirty years old, thin and rather pale, but who had never had any serious sickness, has suffered from herpes progenitalis three or four times a year for about ten years. He had severe attacks of gonorrhea when twenty-four and twenty-

[1] This clinical fact (and I can cite numerous similar cases) is in direct accord with and confirmatory of the results of experimental inoculations, made by a goodly number of observers, who produced lesions in no way distinguishable from chancroids, by the use of the pus of acne, ecthyma, impetigo, lupus, scabies, and pemphigus.

six years old. He has never had syphilis. He came under my observation in 1886, having a deep sloughing ulcer in the left groin and a similar ulcer on the thigh, just below the groin. These lesions were the sequelæ of two virulent buboes. They were thoroughly healed by curetting, followed by copious irrigation with a five per cent. carbolic solution. Then the parts having been dried, the morbid surface was dusted with iodoform, covered with gauze, and bandaged. On the anterior surface of the corresponding thigh were three little ulcers, in all respects like chancroids, and several hair-follicles were the seat of a deep hyperemia. According to the patient's statement, the lesions upon the thigh were caused by the matter that had escaped from the buboes, he in travelling being unable to dress his ulcers or keep himself clean. The lesions upon the thigh were well cleansed, dusted with iodoform, covered with gauze and bandaged. Briefly stated, it may be said that healing was brought about in all these lesions in three weeks.

As the case is thus far reported it would pass for a well-marked illustration of virulent buboes, complicated by the chancroidal ulcers of the thigh, which were produced by accidental auto-inoculation.

Let us now consider the history of the case. The patient was a very intelligent man, who, by reading and from conversations with medical men, had gained a good general idea of chancre and its consequences, and of chancroid and its sequelæ. His account of his case was as follows:

He had, as stated, for a number of years been much troubled with herpes progenitalis, which appeared before he had suffered from gonorrhea. Each attack came on with smarting, burning pain. In some instances the vesicles were seated on the skin of the penis, in others on the inner surface of the prepuce, and in others again near the frenum and the meatus urinarius. In the early attacks, the vesicles, under simple treatment, healed in about a week. As years went on, he observed that sometimes the vesicles assumed an unhealthy appearance, became much ulcerated, and were very rebellious to careful treatment. On several occasions he was forced to lay up and apply cooling lotions to enlarged and painful ganglia in the groins. Being a thoughtful man in all matters, and observant as to the results of coitus, he convinced himself that his attacks of herpes were never the result of that act. Sometimes the herpes appeared a few days after coitus, and then again it came on in regular form after many weeks' abstinence. This showed him (and his deduction was correct) that in none of his sexual contacts had he been the victim of infection. The facts concerning what took place prior to the development of the virulent buboes first spoken of are as follows: The patient had not had sexual intercourse for three months, and was suddenly attacked with a crop of herpetic vesicles, seated in the left fossa of the frenum. Being a very careful man as to the cleanly condition of his genitals, he had always been scrupulously so when he was troubled with herpes. This group of vesicles rapidly developed into a large ulcer, which a surgeon pronounced to be a chancroid, which he maintained could only have been contracted in coitus. He refused utterly to listen to the asseveration of the patient that he had not been exposed in three months. Two weeks' careful treatment, largely with iodoform, healed the ulcer, but before that consummation was reached the virulent process in the groin and thigh began, which eventuated in the buboes and the chancroids I have spoken of.

Here then was a case in which an undoubted history of herpes preputialis was given, in which infection in sexual intercourse was entirely out of the question, but in which the vesicles, from some unknown cause, became transformed into an ulcer, typically chancroidal in appearance. By means of lymphatic infection, this ulcer (for the patient had had no lesion whatever about the foot, leg, or buttocks) gave rise to two virulent buboes, the pus of which, coming in contact with the thigh, produced typical chancroidal ulcers.

During the following years, recurring attacks of herpes were experienced, in some of which the vesicles became converted into destructive ulcers. On two occasions I saw these vesicles in their unruptured condition, once on the internal layer of the prepuce and once upon the integument of the penis. In each instance I instituted a most rigid antiseptic condition, and kept the ulcers covered with iodoform without intermission, with the result of causing the vesicles to wither, and the excoriations to heal promptly, and without the least untoward complication.

In 1890, however, this gentleman came to me again under the following circumstances: Three weeks previously, not having had coitus in four months, he had again been attacked with preputial herpes near the right of the frenum. Being deeply engrossed in business, he contented himself with washing the parts and applying a mild lotion on cotton. The vesicles developed into a typically chancroidal ulcer, and the ganglia in the right groin became swollen and painful. The ulcer was treated with iodoform, and cold was applied to the groin. The chancroid healed, but the ganglia went on to suppuration. After free incision a deep ulcerated surface was left, which was as typically characteristic of a virulent bubo as any that I have ever seen. In its cure it presented the same difficulty observed in the treatment of most virulent buboes. This patient has since suffered with two attacks of herpes, but by the observance of the most rigorous antisepsis from the time of their first appearance I have been able to prevent the development of destructive ulcers.

In one particular this case is difficult of explanation. It may be that this gentleman's tissues afforded an especially good culture-ground for pyogenic microbes, for his lesions were certainly very active

and destructive, considering that he did not suffer from syphilis.

Finally, it is very important to understand the relation of an active syphilitic infection to excoriations, chafes, abrasions, and fissures about the genitals, male and female. In the first and second years of syphilis more especially, and in some instances at later periods, we find that in many cases the simple lesions just enumerated become transformed into ulcers having every feature and characteristic peculiar to chancroids. Cases presenting these features are frequently very puzzling, and it is important that their nature should be clearly understood.

Perhaps I can make the matter more clearly understood by the citation of a case that is now under treatment:

A gentleman, aged twenty-eight, has been syphilitic less than a year, and though commenced rather late, specific treatment is doing well for him. He presents four typical chancroids on the inner aspect of the prepuce. They appeared twelve days after intercourse with a woman who, under examination, was found to have a simple leucorrhea. The gentleman had for years, at irregular intervals, suffered from herpes progenitalis, and he was much impressed with the fact that in two such attacks that have occurred since his infection with syphilis the excoriations had developed into unhealthy-looking and destructive ulcers, which were difficult to cure.

In this case we find a condition very frequently observed in syphilitics. Simple inflammatory lesions of the genitals become converted into typical chancroids, or, as we may say, wound-infections, or septic ulcers, undoubtedly as the result of contamination with pyogenic microbes, the source of which is a mystery. Lesions thus produced often display great virulence, in consequence of the activity of the local infective process (staphylococcus and streptococcus infection), which seems to reach its acme in syphilitic tissues, particularly when the infection is not very old. Pus taken from these chancroids in syphilitic subjects will as a rule be seen to possess great potentiality in the extent and persistence of the ulcers and in the power that it possesses of producing by inoculation similar lesions for many generations.

In some of these cases of chancroid that develop *de novo* in syphilitic subjects, contamination of the inguinal ganglia takes place by direct lymphatic absorption. As a result we have two forms of bubo—the inflammatory, which may be aborted, and the virulent, which leads to abscess. It is very probable that in the tissues of syphilitic subjects the pyogenic microbes find a most favorable nidus. The inflammatory process to which they give rise is often very active, and the resulting pus, rich in microbes and their poisons or tissue-products, is very virulent and destructive. Observation during a long period of years has convinced me that chancroids derived from syphilitic pus (the diathesis being quite active) are commonly more destructive than their congeners that are caused by the various forms of simple pus.

It is well to emphasize the fact that in old syphilitics, male and female, in whom the diathesis has seemingly run itself out, lesions of continuity about the genitals are liable to assume the features and characteristics of chancroids. A recollection of this fact will often render an obscure case clear.

It now only remains to speak briefly of the influence of syphilis in producing chancroids in women. The tissues of the genitals of syphilitic women, like those of men similarly afflicted, are liable to the development of chancroidal ulcers *de novo* upon all forms of lesion of continuity, such as herpetic vesicles, abrasions, chafes, etc. In proportion as the disease is active and the general nutrition is lowered, these ulcers will be found to be more active and destructive—in short, more typically chancroidal. I will briefly report two recent private cases as illustrations of this statement:

A young woman of flabby build, syphilitic a year, in consequence of vulvar pruritus following menstruation scratched the surface of the right protruding nympha until it was raw. She had absolutely refrained from coitus for a month, and had not been near any one suffering from chancroids. Ten days after this paroxysm of scratching I saw her with a large typical chancroid upon the wounded nympha, and a bubo that, when opened a week later, presented every characteristic of virulence.

The next case is very similar. A young woman, fifteen months syphilitic, treated irregularly, noticed a group of herpetic vesicles to the right of the root of the clitoris. She had had similar lesions in years gone by. She had not indulged in sexual intercourse for several months. Though she applied a mild carbolic solution of her own preparation upon cotton, this group of vesicles promptly became transformed into a typical chancroid as large as a ten-cent piece. Very shortly pain in the right groin pointed to ganglionic contamination, and later on I opened as typical a virulent bubo as I have ever seen.

In the light of what has already been said as to the development of chancroids in syphilitic subjects, I need make no further comment on these cases, for they are simply other illustrations of wound-infection. They speak for themselves, and I can vouch for the correctness of the facts. Any physician who sees many cases of venereal disease will certainly call to mind similar ones, some of which may have been obscure to him.

In old prostitutes, the subjects of ancient and perhaps extinct syphilis, we find chronic chancroids that linger in an indolent and aphlegmasic condi-

tion for years and years, frequently giving their bearers very little concern, but presenting great rebelliousness to treatment. They are relics of active ulceration, and it is probable that the microbes which have caused them have become weak and attenuated, and hence are powerless for active invasion.

In this clinical summary I have endeavored to present a general outline of the mode and peculiarities of development of chancroids appearing after sexual contact, and, as we say, *de novo*, without sexual contact, or by accidental pus-contamination. The subject has occupied my mind for many years; and I believe that it is here presented in an accurate manner. I think that I have adduced evidence that proves beyond controversy that the assertions that a chancroid is always of necessity the result of chancroidal pus, and that if all the patients in the world suffering with chancroid would avoid contact with others until their malady got well, the disease would cease from off the face of the earth, are utterly false, and not at all in keeping with the present condition of our knowledge.

To sum up: What we call chancroid is the product of many varieties of pus derived from non-syphilitic and syphilitic subjects. It is therefore a hybrid, heterogeneous lesion, in all cases a septic ulcer, and in many instances simply an active form of wound-infection. This septic ulcer in some cases originates *de novo* from the contact of pyogenic microbes with a raw surface, herpetic or eczematous excoriation, a chafe, etc., sexual contact then having nothing to do with its development. As a general rule, this local infective process is more active in syphilitic than in non-syphilitic subjects. It follows, therefore, that so long as pyogenic microbes and tissue-predisposition exist, chancroids will be found upon the mucous membranes and integument of the human race.

40 WEST TWENTY-FIRST STREET.

GONORRHEAL RHEUMATISM: ITS EFFECTS AND TREATMENT.

BY BERNARD E. BRODHURST, F.R.C.S.,
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IT is certain that gonorrheal, or urethral, rheumatism is in the first instance invariably preceded by a specific discharge. Subsequent attacks may or may not be preceded by a discharge; but the first attack is always preceded by a specific urethral discharge. A second attack of articular rheumatism may be caused by the use of the bougie, or by an act of coition, or by any other form of irritation of the urethral canal.

Exposure to wet and cold weather, the gonorrheal discharge being present or about to appear, tends to induce this form of articular inflammation. Considerable effusion into the affected joints takes place, accompanied with great pain; but, although tension may be very great, suppuration never occurs. Many joints usually become inflamed simultaneously; and all may recover perfectly and without leaving behind any ill results. Every fresh attack of inflammation takes more effect than the preceding one, and seems to be more virulent in its character; and it is probable that although on two occasions the joints perhaps resume their normal appearance and their functions, a third attack may leave the patient lamed. It is common that all joints recover well except one, but that one remains stiff and immovable.

When pain is first felt, and swelling appears, the affected joints should be wrapped in lint covered with mercurial ointment, and they should be bandaged as firmly as can easily be borne, and the patient should be brought rapidly under the influence of mercury, preferably by inunction, with which treatment pain and swelling quickly disappear, and the joints resume their normal condition. At this stage passive motion should be instituted to ascertain that the motion of any affected joint is free, for lymph will have been deposited on the synovial membranes, through which adhesions form that prevent motion. These bands soon become firm, and resist any attempt that a patient himself can make to move the joint. These constitute false ankylosis. The mercurial treatment to which I have referred, if resorted to at the onset of the inflammatory stage, never fails. Swelling subsides as the mercury takes effect.

The large joints, namely, the knee, the hip, the elbow, and the shoulder-joints, are those that are most frequently affected. Every joint, indeed, may become inflamed, and ankylosis may result, not in one joint only, but in every articulation of the body. Such a case I have had under my own care. I saw this patient with Dr. Lever. He had had three attacks of gonorrheal rheumatism, each of which was preceded by a specific urethral discharge. He recovered the use of his limbs after each attack, but each occasion required longer time for recovery than the preceding one, and the third attack left a certain degree of stiffness that was never entirely removed. This, however, appeared to be muscular rather than articular, and it was only felt after a long rest in one position. At length he married. After marriage he was seized with violent inflammation. Every articulation was inflamed, and became ankylosed. At this time I saw him, and he could neither move his head nor any limb, nor could he masticate. He lay like a log, without power of motion.

When adhesions remain and become firm, after inflammation has ceased and passive motion has

not been employed, force is needed to restore mobility. If this force is employed in extending the limb, dislocation may be produced, or at least some displacement of the articular surfaces may occur. Force should therefore always be used in the direction of flexion. When force is thus employed no injury can accrue to any structure, and, if this operation has been long delayed, so that contraction of the flexor muscles cannot otherwise be overcome, their tendons should be divided. But, before force is applied to rupture adhesions, the punctured wounds should be allowed to heal, for otherwise they may readily be extended into lacerated wounds from three to four inches in length. In this manner mobility is very quickly regained. The operation is entirely successful, and it ranks among the most satisfactory in the whole range of surgery. I operated in this way, with Mr. Henry Lee, on an elbow. Disease had been contracted in China, and several joints became inflamed. All, however, recovered except the elbow. This joint became perfectly stiff and immovable. Under chloroform the adhesions yielded instantly and completely, and mobility was restored. In the course of one month he returned to China, having recovered the entire use of the joint. Three years later I met him accidentally, and inquiring as to his elbow, he answered: "Really, I have forgotten which was the stiff elbow; both are alike"—at the same time rapidly flexing and extending the forearms.

With Dr. William Wood I saw another case in which disease had been contracted in Ceylon. In this instance the patient slept in the open air, and awakened cold and in great pain. With difficulty he was carried to his own room, the hip, knee, ankle, and shoulder joints being much swollen and dreadfully tender. The hip became so much swollen that it was supposed that suppuration would occur. This joint became stiff and immovable, but all the others recovered perfectly. Sir Benjamin Brodie advised that he should arrange to leave the army, because he would not be able to follow his profession, as he could neither ride nor walk, and "he would take his stiff joint with him to the grave." From Sir Benjamin's house he came to me, and I told him that mobility could be restored. The adhesions yielded with very slight force, and gave way gradually, so that the thigh, which had been fully extended, was flexed upon the pelvis. He suffered no pain, and slept well without an opiate. Passive motion was used, and in some few days he walked about his room, and within a fortnight he walked upward of two miles without injury. In two months I presented him at the Royal Medical and Chirurgical Society, where he was examined by many, and especially by Mr. Coulson, who affirmed that, unless he had heard it from so many credible witnesses, he could not have believed that the hip-joint had ever been diseased, because the head of the femur moved perfectly in every direction. Speaking immediately after the paper was read, in which this case was detailed, and before he had examined the patient or knew that he was present, or that he was an officer in the Queen's service, Mr. Coulson affirmed that the case was impossible, to the great astonishment and amazement of my patient, who was sitting at my side. Immediately afterward the patient rejoined his regiment. Writing to me some few months later, he said: "I walk occasionally twelve or thirteen miles a day;" and again, later, he wrote: "I can sit in the saddle all day without pain."

I have also operated, with Sir Prescott Hewett, on the hip, disease having been contracted in Russia, and on another case from India; with Sir William Ferguson I also operated on both hips and both knees in a case from Bermuda—as well as in many other cases, in which mobility has been perfectly restored.

Ten years ago I had operated on upward of 1000 cases of fibrous ankylosis, and in no instance, either before that time or since, have I met with any accident, whether displacement, fracture, inflammation, or injury of any kind whatsoever.

TWO NEW CASES OF FILARIA SANGUINIS HOMINIS.

By R. M. SLAUGHTER, M.D.,
of Theological Seminary, Virginia.

In August of the present year I made the, to me, interesting discovery that indigenous cases of filaria sanguinis hominis are to be found in Virginia. During that month, in two instances, while making microscopic examinations, I found in urine unmistakable specimens of the embryo filaria sanguinis hominis, and I give below the clinical histories of the cases from which the specimens were obtained.

It is well known that indigenous cases of filaria sanguinis hominis are to be met with in our Southern States. This has been established by the observations of Guitéras, De Saussure, and others. So far as I have been able to ascertain in a careful investigation in the Library of the Surgeon-General of the Army, in Washington, D. C., twenty-three cases have been reported up to July, 1891. Reports of some other cases are to be found, it is true, but they are not indigenous, for the patients were natives of warmer latitudes.

Of the twenty-three cases mentioned, Dr. de Saussure, of Charleston, S. C., has reported twenty-two. (See The Medical News, June 28, 1890.) The remaining case is that reported by Dr. W. M. Mastin, of Mobile, Ala., and reported in

a paper read at the meeting of the American Association of Genito-urinary Surgeons at Washington in September, 1888 (*Annals of Surgery*, vol. viii, No. 5, November, 1888). My discovery of these two cases in Northern Virginia extends, then, the area in which indigenous cases have been encountered to nearly as far north as the thirty-ninth parallel of latitude, which is about that of Washington, D. C.

The following is the history of these cases:

CASE I.—Miss —, a maiden lady, about sixty-five years of age, was born in Richmond, Va., and has resided in various portions of the State, but for the last twenty-five years at Theological Seminary, which is six miles southwest of Washington, D. C. She has enjoyed remarkably good health all her life. About the first of August last, she returned home from a visit to Richmond, looking and feeling very badly. She appeared anemic and complained of feeling weak and always tired; had diarrhea, and irregular, slight chills and fever at night. The treatment instituted entirely failed to relieve her, and, as I feared renal trouble, I asked for a specimen of her urine for examination. I was then told by the family that it had been noticed for some years that at times her urine "did not look right." The sample was bloody and chylous. The case was one of chylo-hematuria, which a microscopic examination showed to be of filarial origin, many embryo filaria being found in the sediment. There was no evidence of renal disease. The annexed illustration shows the appearance of the filaria.

For the next few weeks the patient displayed a tendency to the formation of furuncles about the face; a small alveolar abscess formed above the upper incisors, which I opened; on examining the pus I found several embryo filaria therein. It may be worthy of mention that some twenty or more years ago she suddenly became quite deaf and remained so for several months, when an abscess formed in the mouth. When this was opened the deafness disappeared. Careful inquiry into her past history has elicited no other facts having any bearing on the case. Under treatment, consisting of tonics and astringents, the diarrhea has ceased and her general condition has greatly improved.

CASE II.—Mrs. —, white, about forty-five years of age, was born in Fredericksburg, Va., and for the last twenty years has lived in Alexandria, Va. She is a patient of Dr. W. R. Purvis, of Alexandria, and has recently been under treatment for hysterical paralysis. She conceived an idea that she had Bright's disease, and a specimen of her urine was handed me by Dr. Purvis for microscopic examination. This specimen I found to be chylous and to contain numerous embryo filaria. I have since examined a second specimen, which was also chylous and contained filaria. In this case the chyluria is the only manifestation of the presence of filaria that has been observed, unless the hysterical condition be so regarded, and for this there would seem to be no sufficient reason.

In neither of these cases have I yet been able to examine the blood.

The most common manifestation of the presence of filaria in the human subject, in indigenous cases especially, is chyluria. In many cases it is the only symptom; in some it is associated with others, such, for example, as hematuria, lymphangitis, enlarged glands, abscesses, dysentery, diarrhea, or lumbar pains, etc. In some cases chyluria has not been observed, the leading manifestation being hematuria, chylocele, or scrotal elephantiasis, or lymph-scrotum.

In those countries in which the disease is quite common, a formidable array of pathological conditions has been found associated with filaria. According to Bancroft, Fayrer, Sonsino, Manson, and others, the following are to be found so associated: Chyluria, hematuria, anemia, tuberculosis, chylocele, varicocele, elastic tumors in axilla and groin, lymph-vesicles bursting on scrotum and abdomen, skin diseases (craw-craw), acute orchitis, lymphangitis with fever, erysipelatous lymphangitis leading to hypertrophy of the skin, elephantiasis of the scrotum, and abscess of the scrotum, of the glands of the neck, of the lymphatics of the arm and thigh, intra-pelvic abscesses, peculiar steatoma of the face, venous varix, cerebral abscess and other lesions of the brain, cachexia, deterioration of the general health, deafness, eye diseases, etc.

The subject, I would say in conclusion, seems to me to offer an interesting and possibly extensive field for future investigation.

Stoerk, of Vienna, has succeeded to the Laryngological clinic of Schrötter, who has been given a professorship of Clinical Medicine and a medical clinic.

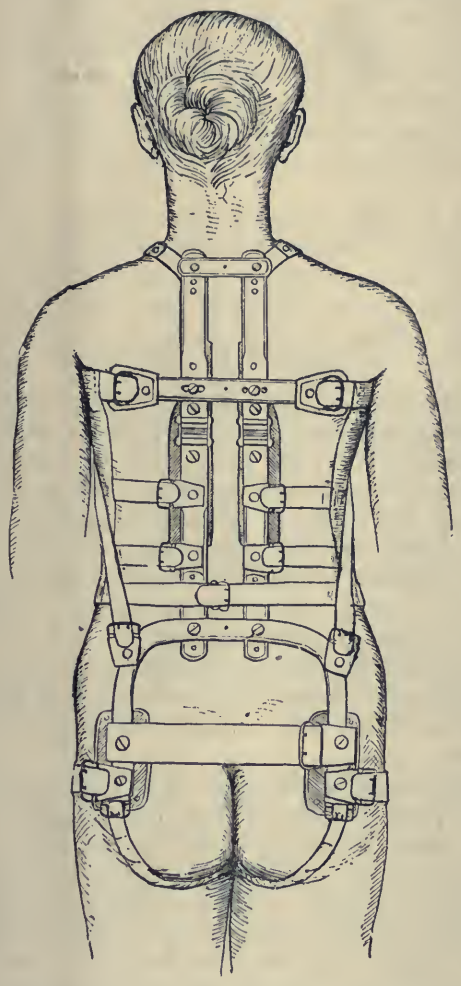
Prof. Carl Fraenkel, of Königsberg, has been elected to the chair of Hygiene at Marburg, in succession to Rubner, called to Berlin.

THE VALUE OF MECHANICAL TREATMENT IN OLD AND NEGLECTED CASES OF POTT'S DISEASE.[1]

BY HENRY LING TAYLOR, M.D.,
OF NEW YORK.

ONE of the most active and eminent operative surgeons of New York said to the writer, not long ago, that he got but little bone-surgery to do, because orthopedic work was so successful. Not the least important service that the pioneers in orthopedy have rendered to the profession and to the public is the diffusion of the knowledge of the

FIG. 1.



relative curability of most crippling affections; and, as a matter of fact, the adult cripple in our large cities is now much less conspicuous than formerly. There is a class of sufferers, however, still unfortunately numerous, and for whom professional advice is often sought, namely, the class of kyphotics, in whom the inflammatory process has dragged out its tedious course through years of suffering and increasing deformity, and who, on account of inadequate treatment or too little persistence, have found no relief. The results of neglected and unsuccessfully-treated Pott's disease are so serious, and in many respects so irremediable, that it seems desirable to ascertain under what circumstances and how far their unfortunate condition can be mitigated.

The orthopedist sees cases of spinal caries in all stages, from a time preceding the appearance of spinal deformity to the aggravated hunchback, with or without severe constitutional symptoms, and in whatever stage presented, modern mechanical

FIG. 2.

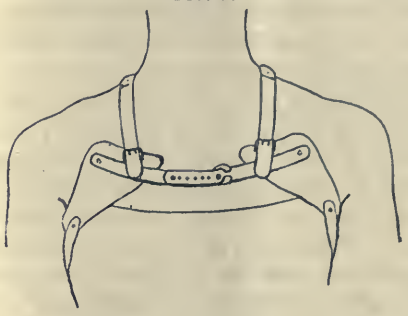
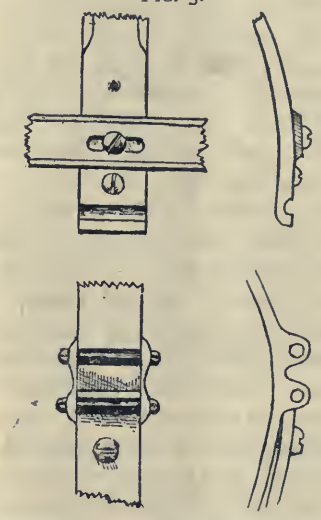


FIG. 3.



treatment seeks by appropriate methods to procure rest and protection from violence for the inflamed spine, and to arrest, and in exceptional cases to rectify, accrued deformity.[1] The means employed by the writer to secure these results depend upon the principle of antero-posterior leverage, so applied to the spine by means of a specially-adapted apparatus[2]

[1] Read before the American Orthopedic Association, Washington, September 23, 1891.

[1] See "The Cure of Pott's Disease with Recession of the Deformity," Medical Record, January 8, 1887.

[2] "Description of Improved Spinal Apparatus," Transactions American Orthopedic Association, vol. i, page 15, and Medical Record, November 19, 1887. See also "The Mechanical Treatment of Angular Curvature, or Pott's Disease of the Spine," by C. Fayette Taylor, M.D., Transactions N. Y. State Medical Society, 1863, etc.

as to relieve the carious bodies of the vertebræ of harmful pressure. This may be supplemented by short periods of recumbency, daily rests, and other hygienic remedies. It goes without saying that, the earlier in the disease the case is treated, the better the average result; but what measure of relief does such treatment offer to long-standing and greatly deformed cases?

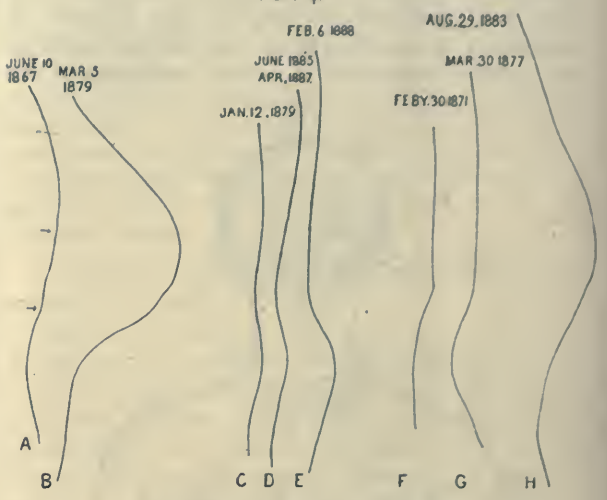
We must distinguish between treatment of the deformity and treatment of the disease.

If the case in question has no longer any constitutional symptoms, no symmetrical, lateral, or ventral pains, no reflex rigidity of the spinal muscles, and no sharp knuckle, but an evenly rounded boss; and if he can move about freely, without distress or exhaustion, the disease has probably spent itself, and the vertebræ and peri-vertebral regions have been more or less successfully pieced out with new tissue, which may, however, be inelastic or imperfectly nourished, and liable at some future time to a recurrence of inflammatory softening, after the infliction of unusual violence, or through impairment of general nutrition. These cases of spent Pott's disease, with large deformity, may be energetic and active, and in business or professional life hold their own well, but they work on a small margin, and at a disadvantage, as the result of crowded viscera, impeded respiration, and a body in which no organ has free play. I remember a middle-aged and cruelly deformed hunchback, who worked as a heavy porter at one of our railway stations, but his face showed the strain he was under, and after a few years he disappeared from his post. Efficient mechanical treatment in the earlier stages provides the sufferer with a substitute backbone, and, by relieving the organism in a great measure from the strain it is under, favors a more perfect bodily development and growth, while deformity is being checked and the healing process inaugurated. Many cases, however, run their course, or a large part of it, without pain, or with so little pain, and so noteworthy an absence of striking symptoms, that the patient and his guardians are often lulled into false security when help is most needed; and at certain stages the surgeon himself may be at a loss to decide positively as to the presence or absence of disease.

I show the tracing from the back of a boy who came in 1867, at nine years of age, with beginning spondylitis (Fig. 4, A), but who declined treatment, and reported twelve years later with a severe hunchback (B), and a freely discharging sinus. He was led by the mildness of his symptoms to indulge in athletic exercises, such as riding and fencing, to within four years of his second visit.

A boy of fourteen, from Chile, S. A., with a large kyphosis of the mid-dorsal region, who consulted me a year ago, came wearing a plaster-jacket. His disease began at four; at eight he was apparently well; but, after violent exercise, symptoms recurred, followed by a paraplegia lasting six months. This patient was kept recumbent for five years, and had recovered perfectly from his paralysis. In spite of his deformity and his desire for support, as evidenced by the jacket, he had lately been in the habit of playing cricket.

FIG. 4.



A delicate boy, with disease of the lumbar region, who had done well, and whose deformity had been controlled (C D) for eight years by mechanical treatment, was free from symptoms, but after a six months' trip to Europe, taken without my approval, his deformity increased considerably (E), and there were symptoms of vertebral softening. It has taken several years to regain the ground lost; indeed, there is more irreparable damage.

The following case may illustrate the liability of deformity to increase from lack of spinal rigidity after all disease may reasonably be supposed to be absent:

The patient, a girl, came in 1871, at the age of three years, with a sharp knuckle in the upper lumbar region, as shown in the pattern (F). After nearly six years of mechanical support, during which an abscess appeared and healed, her deformity was rounded and less prominent (G), and she was in good health, and free from symptoms. She was considered free from disease, but continuance of support was advised, lest there should be further increase of deformity from slow yielding of recently healed tissues. This advice was declined, and the apparatus discarded. Six years later, when thirteen, she reported with a large increase of rounded projection (H), but in good health, and with no recurrence of symptoms.

Cases that have been allowed to run along without adequate treatment often fail to heal completely,

and are especially liable to exacerbations and relapses.

A gentleman of fifty, who was attacked with disease in the dorsal region at nine, came to me last year still wearing a corset. At thirty-nine he was completely paraplegic for four months, but recovered, and presented at his visit to me no positive evidence of disease. He had never had an abscess, but his deformity was of the extremest grade, and he appeared to be about four feet three inches tall.

A gentleman of forty was seen in 1883. His disease was in the dorsal region, and began at the age of five. He had been kept recumbent for two years, and had afterward had imperfect mechanical treatment. At about twenty he had had three attacks of paraplegia, and since then he had had reflex twitching of the legs, and from time to time attacks of pain. Deformity was very severe, with the apex of the projection in the lower dorsal region. After thirty-five years, disease was undoubtedly still present.

A gentleman, about thirty, who came to me a few years ago with extreme deformity, had had his disease from childhood, but was free from symptoms for many years, until he was injured in a cyclone three years previously. He was an exceptionally energetic and active man, but had been obliged, by the severity of his symptoms, to give up everything. Careful mechanical treatment caused the disappearance of all symptoms, and his deformity did not increase during five or six years. After leaving off support, however, he injured himself again, and in a short time symptoms of softening recurred, and the deformity increased considerably.

Many of these relapsed cases; and those that have been affected for years by a spondylitis of low grade with gradually increasing deformity, respond kindly to treatment, and may be restored to health and activity.

Some of the cases cited would seem to suggest that a complete bony ankylosis after Pott's disease is much later, rarer, and more circumscribed than has usually been assumed to be the case.[1]

If one will take the pains to make a series of lead tracings of the kyphosis in a number of so called "ankylosed" cases, from time to time, repeating the observations on the same cases under different conditions, this statement will not seem too strong. This is also well shown in patterns taken before and after suspension in these badly deformed cases. Changes in the contour are observed that can hardly be wholly explained by compensation in the unaffected portions of the spine. Such cases can often add an inch or two to their height by a voluntary attempt to straighten. In many of the early cases, cured with little or no deformity, motion in the diseased areas can also be demonstrated. This explains the necessity of prolonged treatment after subsidence of symptoms, and the slow yielding of the newly healed spine, which often occurs even without recurrence of rational symptoms, when support is inefficient or too soon discontinued; also, the liability to relapse from accident or other causes after long periods of immunity. It explains, too, the benefit to be obtained in certain cases from mechanically relieving the patient of the effort of self-support, even when there is little or no sign of disease. The patient's column is out of balance, and has to be supported with great effort by the patient's debilitated muscles in their disturbed relations.

In cases of Pott's disease of long standing and great deformity, whether in children or adults, the indications for carefully adapted and long-continued mechanical support to the spine are as clear and often as urgent as in recent cases, and such treatment is usually followed by gratifying and sometimes by brilliant results. Even when it is too late to improve the deformity the patient may often be restored to health and usefulness, and when no symptoms of disease are present a moderate improvement in the figure and carriage may occasionally be attained. No patient should be denied an opportunity for relief on account of age, severity of the symptoms, or the long duration of his disease.

Mr. Noble Smith, speaking of the lateral curvature, is reported to have said recently:[1] "The surgeon should keep the mechanical treatment in his own hands, just as much as he would that of a broken limb." In Pott's disease, at least, he should also continue to control the case until the patient is sound and the spine is self-supporting.

[1] Vide "Cure of Pott's Disease, with Recession," etc.

ORIGINAL LECTURE.

ARTHRITIS FOLLOWING TYPHOID FEVER.

Abstract of a Clinical Lecture
Delivered at the Woman's Hospital, Philadelphia.

By FREDERICK P. HENRY, A.M., M.D.,
PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

You saw this patient two weeks ago, when I introduced her as a typhoid convalescent and made some remarks upon the proper treatment of the convalescent stage of enteric fever.

Her recovery, which until quite recently was steadily progressive, has been interrupted by an affection of the left elbow-joint. You observe that the forearm is flexed at an obtuse angle, and that when I attempt to extend

[1] Last meeting of the British Medical Association.

it or flex it still further, I almost immediately meet with a resistance that is evidently articular.

There is some swelling of the joint, most marked between the internal condyle of the humerus and the olecranon process, but no great degree of tenderness, and no redness whatever.

This condition, having made its appearance after the complete subsidence of the fever, is probably to be ranked among the sequelæ of typhoid. Had it occurred during the course of the fever, it might have been regarded either as an intercurrent affection or as a complication. It may seem immaterial to discuss the question whether a disease occurring in the course of another is a true complication or a mere intercurrent affection, but the position of medicine as a science has been achieved by noting and preserving such distinctions. An intercurrent affection is something accidental—*i. e.*, no more liable to happen to a patient affected with a given disease than to one not so affected; while a complication is a disease, or a process, secondary to and more or less dependent upon another. Intestinal hemorrhage, intestinal perforation, and rupture of the spleen are complications of typhoid fever; the latter exceedingly rare, but none the less a complication. Erysipelas, pneumonia, and diphtheria, being due to separate infections, are intercurrent affections. Every affection that follows typhoid fever is not entitled to be called a sequela. There must be an etiological connection between them. The stage of convalescence from typhoid fever is one of great physical susceptibility. The immunity from one infectious disease that has been conferred upon a patient who has successfully passed the ordeal of typhoid fever, is at the price of a temporary increased liability to other affections. These, however, are not, as just stated, necessarily sequelæ except in an etymological sense, for their only connection with typhoid fever may be chronological. It must be confessed that it is sometimes difficult to recognize the etiological connection between the sequela and the primary disease. The tendency to confound the *post hoc* with the *propter hoc* is notorious, but there are certain guiding lines that, in most cases, will lead to a solution of this interesting diagnostic problem. One of them is *continuity*. For example, the mental faculties are always more or less impaired in cases of typhoid fever, but in mild cases this may be almost unrecognized, because no demands are made upon them. If, however, after fever has ceased and muscular strength has returned, we observe a marked insufficiency in the performance of mental operations, we naturally attribute the condition to the recent fever. There has been no return of mental health. The recuperative powers of the body have, in this instance, been greater than those of the mind. In this manner we recognize melancholia, dementia, and mania, as sequelæ of typhoid fever, even though they may have been preceded by an interval of apparent mental health. To compare small things with great, the alopecia that follows typhoid fever is recognized as a sequela not only because of its constant occurrence, but because it is known to be a result of febrile processes in general. Peripheral neuritis is a genuine sequela of typhoid fever, although not so frequently a result of the typhoid as of the diphtheritic poison. Before regarding peripheral neuritis as a genuine sequela of typhoid fever, we should, however, be able to exclude the action of severe cold and traumatism.

Arthritis is an undoubted sequela of typhoid fever, though a rare one, and it is recognized as such by certain peculiarities that distinguish it from other non-typhoidal forms of inflammation of the joints.

There are certain facts connected with this case that make it somewhat exceptional. The patient is a woman, thirty years of age, who previous to the attack of typhoid fever was perfectly healthy. Now, statistics show that arthritis in the course of typhoid fever is more prevalent in males than in females—according to Keen[1] the proportion is 3 to 1; according to Bazin,[2] 4 to 1.

It has also been proved statistically that the affection is most frequent at about the age of eighteen, and in individuals of scrofulous diathesis. The hip, knee, shoulder, ankle, and elbow are the principal joints affected.

The chief questions connected with cases of this sort are: 1. Is the arthritis a manifestation of rheumatism brought to light by the typhoid fever? 2. Is it a manifestation of pyemia? 3. Is it an affection peculiar to typhoid fever and induced by its specific poison—*i. e.*, is it a genuine sequela?

The disease differs materially from rheumatism in several fundamental particulars. In the first place it is monarticular; secondly, it has a marked tendency to suppuration and to the formation of ankylosis; and, finally, it has no tendency to involve the heart.

The question whether the affection is pyemic is sometimes more difficult to decide than in the present instance. In one patient the joint-affection was not ushered in by chill, fever, or, in fact, by any constitutional symptoms. The temperature has pursued a regular course; the appetite and digestion have not been impaired, and the patient has been steadily improving. The onset and progress of the joint-disease have been most insidious. Pyemia may certainly be excluded, notwithstanding the fact that there was a focus of suppuration due to a hypodermic injection of ergotine administered on account of intestinal hemorrhage.

The arthritis must, therefore, be regarded as due to the typhoid infection, and consequently as a genuine sequela.

The prognosis of these arthritic complications is by no means unfavorable. As a rule, according to Keen, the effusion is gradually absorbed, and the joint is restored to its former usefulness. There is one possibility that particularly concerns the hip-joint, namely: spontaneous dislocation. The distention from fluid is sometimes so great as to stretch and weaken the ligaments, so that in lifting the patient in the usual manner, by placing one arm under the back and the other beneath the knee-joints, there is danger of the head of the femur slipping out of its socket.

With reference to treatment, salicylate of sodium, and, in fact, all the salicyl compounds, have been proved useless—another argument (*ex juvantibus*) against its rheumatic nature. Quinine is much more likely to be of service. The joint should be placed in such a position as to make it most useful in case of subsequent anky-

[1] Toner Lecture, 1876, On the Surgical Complications and Sequelæ of the Continued Fevers.

[2] Thèse de Paris.

losis. For example, the arm of this patient should be flexed to such an extent as to enable the hand to reach the mouth, so as to take part in the act of eating.

Blisters and tincture of iodine are both serviceable, and of the two I would give the decided preference to the first. The system should be supported by suitable food and tonics, and the nutrition of the muscles concerned in the motion of the joint should be maintained by massage and faradization. The latter injunction is most important in case the disease is of protracted course; for there is undoubtedly an intimate trophic connection between the joints and the muscles, or, to state it differently, the atrophy of the muscles connected with a diseased joint is greater than can be reasonably attributed to mere inaction.

CLINICAL MEMORANDA.

A CASE OF SUPPURATIVE PYELO-NEPHRITIS CONSEQUENT UPON RENAL CALCULUS; NEPHRECTOMY BY LAPAROTOMY; RECOVERY.

By MANNING SIMONS, M.D.,
PROFESSOR OF GENERAL SURGERY IN THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

Mrs. B., an energetic, healthy woman, the mother of five children, called at my office in the early part of the month of June, 1891, for advice, complaining of an uncomfortable feeling of weight and tension in the lower portion of the right side of the abdomen. She had suffered no pain, nor was she conscious of any failure of health.

By palpation a lobulated tumor was discovered on the right side, extending from the lower margin of the ribs to the crest of the ilium, reaching well over to the left side beyond the median line. It seemed to be a tense cyst, elastic, but without fluctuation. It was perfectly movable, and could be traced well back toward the right lumbar region. The uterus was found to be of normal size, and perfectly free in movement, having apparently no connection with the tumor. The true pelvis was not encroached upon by the mass, and the uterine appendages seemed to be in no manner involved. I judged that the tumor was connected with the right kidney. Pus in large quantity was found in the urine, and upon this evidence a diagnosis of pyelonephrosis was made, but, as there had been no previous history that would indicate the presence of renal calculus, we were unable to arrive at the ultimate cause of the condition. Puncture and aspiration were not thought advisable.

The patient was admitted into St. Francis Xavier's Infirmary on June 30th, and prepared for operation.

A careful estimate was made of the quantity of urine passed from day to day—an average of a quart in twenty-four hours; and microscopic observations of the urine were made for casts or other information, with negative results.

It was determined to perform laparotomy in preference to the lumbar operation, and on July 2d, with strict antiseptic precautions, an incision four inches in length, commencing about an inch above the umbilicus, was made at the outer border of the rectus muscle, through the linea semilunaris. This line was selected in preference to the linea alba, as lying nearer the middle of the tumor. The abdominal cavity having been opened, the tumor presented itself in the opening, and a sound was made to sweep over it in search of adhesions. This instrument glided so smoothly and met with so little resistance, that it immediately became evident that the growth was retro-peritoneal. The peritoneum was, therefore, incised, when it was found that the abdominal incision was not sufficiently extensive to permit the tumor to be turned out; and it was, therefore, lengthened upward to six inches. Even with this increase of working-room the tumor could not be dislodged, and it became necessary to separate the adherent peritoneum, by peeling it off with the fingers. This procedure permitted me to verify the connections of the mass with the right kidney. Before the tumor could be turned out through the abdominal wound, however, it had to be enucleated from a thicker capsule or investment. This having been accomplished, the mass was readily brought out and its connections isolated. The tumor then ruptured spontaneously, and nearly a pint of pus was poured upon the table.

The connections of the tumor formed a short pedicle about two inches in diameter, made up of the renal vessels and ureter with their connecting tissues. This was transfixed with a Tait's forceps and tied in two portions with silk ligature, the last turn of the ligature including both portions of the pedicle. The lower extremity of the ureter could not be found, and therefore it had to be left untied.

The tumor being removed, a cup-shaped cavity was left represented by the envelope from which it had been enucleated, at the bottom of which was the ligatured pedicle. All ragged ends of tissue were removed with scissors, and the abdomen was flushed with boiled water. There was but little hemorrhage, but an extensive raw surface was left, from which it was probable a large amount of oozing would take place.

To meet this indication, drainage had to be provided for at the most dependent portion of the abdominal cavity practicable. A large-sized rubber drainage-tube was, therefore, passed entirely through the cavity antero-posteriorly from the upper end of the parietal incision through the bottom of the cup-shaped cavity left at the site of the tumor and brought out at the back, at the outer border of the erector spinæ muscles, two and a half to three inches from the lumbar spinous processes, and mid-way between the last rib and the crest of the ilium. The abdominal wounds were closed and dressed in the usual manner.

The operation from beginning to end consumed about forty minutes, and the patient recovered well from the anesthetic, and there was but little, if any, shock. In the evening there was some reaction, the temperature being 99.5°; the woman was somewhat restless, but had refreshing sleep; there was, however, some nausea, some probably as a result of the anesthetic. One and a half pints of urine were passed between the time of the operation and the hour of evening observation. The dressings were not disturbed, but on the morning of the second day, July 3d, as the temperature reached 100° and there was some pain at the site of the wound, the dressings were removed in order to permit of examination. There

had been a considerable discharge of a bloody nature through the posterior extremity of the drainage-tube. The cavity was, therefore, washed out through the drainage-tube with Thiersch's solution, and the wound was dressed again as before. There had been passed one pint of urine since the observation of the previous evening, and the woman had had a comfortable night.

On the third day, July 4th, the morning temperature was 99¼°. The abdominal wound was not disturbed, but the drainage-tube, from which there was very little discharge, was pulled down from the posterior end and about two inches cut off. A calomel powder was administered, followed by two and a half Seidlitz powders given in doses of half a powder every half-hour until the bowels moved. Five movements resulted.

For the first twenty-four hours the patient was allowed only a teaspoonful of hot water every hour, but on the second day, as the nausea still persisted, half of an effervescing soda powder was administered every hour or two, with the result of relieving that distressing symptom. On the third day she was permitted to take milk and lime-water in small quantity and at long intervals.

On July 5th the quantity of urine had increased to a quart in twenty-four hours, and chicken-broth was added to the nourishment. On July 7th (fifth day) the drainage-tube was removed through the posterior opening. On July 9th (seventh day) the sutures were removed and the wound appeared to have healed throughout, except at the upper extremity, where the anterior extremity of the drainage-tube lay, but suppuration had taken place at the site of several of the deep sutures, despite the care with which they had been prepared. The cavity was still washed out each day through the posterior opening with Thiersch's solution.

On July 15th (thirteenth day) the temperature, which up to this time had ranged from 99.5° in the morning to 100° at night, rose to 101°, in consequence of the development of small abscesses at the points of the deep sutures on both sides of the abdominal incision. These openings were enlarged to permit proper drainage of the pus, and the cavities of the abscesses touched with carbolic acid. The temperature remained high, with considerable oscillation between morning and evening, varying from 99.5° A.M. to 102° P.M., until July 22d (twentieth day), when the posterior opening, which had apparently solidly healed, was opened and a considerable quantity of pus was discharged. From this time the temperature remained normal.

August 1st (thirtieth day) another abscess at a suture-point was discharged at the lower extremity of the abdominal incision. After this occurrence the patient rapidly improved, and on August 10th (thirty-ninth day) she was up.

The tumor was examined by Dr. Eugene Wasdin, Professor of Histology and Pathology in the Medical College of the State of South Carolina, who reports that he found "a kidney measuring fifteen centimeters in length by twelve centimeters in breadth, lobulated and fluctuant to the touch, with much fat about the hilus. The lobules were five in number and proved to be dilated pus-sacs, the thickened capsule forming their membranes. From these at least 400 c.c. of disorganized kidney-substance and pus were taken. Occupying the pelvis and the calices and projecting into these pus-sacs was a large uric-acid calculus with an outer covering of ammonio-magnesian phosphates. About the capsule there was an extensive growth of new connective tissue firmly embracing it. So extensive was this tissue that it obstructed the exit of purulent débris from the sacs above the stone. Careful section revealed the utter absence of any trace of parenchyma. The growth of connective tissue might account in some degree for the absence of renal pain."

The stone weighed one ounce.

CASE OF AMEBA DYSENTERY; WITH AUTOPSY.

BY EUGENE WASDIN, M.D.,
OF CHARLESTON, S. C.

I WOULD add to the cases of ameba dysentery thus far reported, one that in many characteristics is very typical.

E. C., white male, about sixty years of age, a native of South Carolina, was admitted to the City Hospital on September 9th, suffering from chronic diarrhea, and died September 21, 1891. He had been absent from home in Charleston for a long time, the greater portion of which he spent in Savannah, Ga., the fortnight immediately preceding admission having been spent in Aiken, S. C. He was very weak and deaf, and it was impossible to obtain a perfect history of his illness, but his son assured the visiting physician that his father was taken sick in Savannah, and that it was due to the use of "river water."

At the time of admission the patient must have been ill about four weeks. His skin was dry and harsh, the tongue coated, the temperature 38° C., the pulse 100 and weak. Examination revealed no pulmonary trouble, the heart-sounds were clear, the liver-area slightly increased, the spleen normal, the abdominal walls flaccid.

During the twenty-four hours succeeding his admission there were eighteen evacuations of a thin, yellowish material, containing particles of food-débris, but no blood or glairy mucus. These discharges increased in frequency, and the patient died from exhaustion.

Two days prior to his death I was induced, from the peculiar features in the case, to suspect the presence of the ameba, and was kindly allowed by his physician to examine the dejecta. The discharge was obtained directly from the anal orifice upon sized paper, diluted with warm sterilized water, and examined with a moderately high power. The amebæ were observed in large numbers—from three to five in each field. During the two days before his death several examinations showed numbers of the animalcules present. They were of different sizes, the smaller being much the more animated. I also observed the so-called spores of Kartulis, the small, glistening bodies, with little or no motion, differing but little from the leucocytes present. I did not find the nucleated bodies of Kartulis.

The autopsy, three hours post-mortem, showed cadaveric rigidity not marked; hypostasis about the loins; the abdominal walls flaccid. A median incision revealed the contents of the abdominal cavity of normal appearance, with much fat about the meso-colon; the mesentery and its glands were normal; the intestine was tied at the duodenum and internal rectal sphincter, and placed in a water-bath for examination at leisure. The

upper duodenum was normal, and the ductus choledochus patent; the liver was slightly enlarged and fatty; the spleen was enlarged; the right kidney appeared normal to the eye, but the left had several retention-cysts and a thinned cortex. The lungs were normal, as were the pleuræ. The heart was infiltrated with fat. The stomach was normal. I examined the intestine carefully; the entire small gut was washed and minutely inspected, but, except for a slight catarrhal secretion, it was normal, though its contents were darkened from bismuth salts; there was not a single abrasion of the mucosa.

The diseased process commenced at the cecum, which was much inflamed, with hemorrhagic patches throughout its mucosa, besides a number of shallow ulcerations, and also a number of round openings or holes, as if made with a punch, leading beneath the mucosa into extensive undermined areas. These were intercommunicating, and at times led into the shallow ulcers. The mucosa covering such areas was in many places necrotic, and its débris was noted in some ulcers. Evidently the condition of round openings into the undermined areas was common to all the processes, and the ulcers had resulted from the necrosis of the mucosa above them. These round openings were quite small—about eight or ten millimeters in diameter. The open ulcers showed the muscular coat eroded and necrotic. The ascending colon was in the same condition; in the transverse, descending, and sigmoid colon there was more marked disease of the mucosa; the ulcers were more common, the round openings less so; the entire mucosa not necrotic was very edematous, and this edema extended to muscularis and serosa, which, though "juicy," were at no point penetrated. The mucosa presented a very similar likeness to the appearances seen in chronic cystic colitis, but incision through the edematous portions showed no dilated gland cysts. The contents of the colon were a slimy, yellowish fluid, in which were found numerous amebæ perfectly quiet, to which heating, with sterilized warm water, failed to restore motion. It would seem, then, that this condition of the mucosa is peculiar to amebic colitis, as has been advocated by Councilman. In no other case have I found just this type of undermined ulceration.

This case presents a source of infection quite similar to that found in cities along the banks of the Nile, in which the retention and storage of river water, from one high-water until the next, is depended upon for all household purposes. It is the habitual use of this reservoir-water that gives rise to the disease, and has named it "Nile dysentery." In Savannah, where the infection in the case reported was contracted, the city reservoirs were, until recently, supplied from the adjacent river, and at this time, I am credibly informed, many persons prefer to use the reservoir rather than the artesian supply.

The cases found in Baltimore by Dr. Osler were infected from surface wells, several cases having been traced to the use of water from the same well. In Charleston there are a number of such wells, and in this case the possible use of such water, which is infrequent, may have given rise to the disease, but the history seems to indicate the river-water as the source of origin. The cases reported from Cincinnati, where "river water," with its wealth of surface drainage, is still used, could possibly be traced to a like source. Thus it seems that the habitual use of surface-water from any source may be a means of transmitting the disease, but it is difficult to conceive that the animalcule could in safety reach the colon and establish its habitat there, unless the gastro-enteric tract were primarily diseased; and, although the ameba is deemed capable of inducing the changes noted in the mucosa coli under certain circumstances of gastro-enteric catarrh, and when injected into the lower bowel, as done by Kartulis, without this catarrh the infection does not seem to occur. Otherwise the disease would be much more frequent. From a study of this case, the animalcule does not seem to produce any product poisonous to the economy, nor to give rise to much pus-formation, therefore the leucocytes do not seem to be attracted by the cell-mass of the dead amebæ. Their influence seems solely mechanical; they gain entrance into the submucosa and destroy its cells. It is a process of necrosis rather than of inflammation that is the immediate result of their presence in the bowel. The course of the disease is chronic, and it usually lasts from six to eight weeks.

I am indebted to Dr. P. G. DeSaussure, the attending physician, and to Dr. B. E. Baker, resident, for their assistance.

PENETRATING WOUND OF THE BASE OF THE BRAIN THROUGH THE LEFT ORBIT—HEMIPLEGIA—REMOVAL OF CLOTS FROM THE BASE OF THE BRAIN—RECOVERY.[1]

BY ERNEST LAPLACE, M.D.,
PROFESSOR OF SURGERY AND PATHOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE; SURGEON TO THE PHILADELPHIA HOSPITAL, ETC.

R. B., aged ten years, whilst at play on the lawn of his parents' country residence, fell on a broken fencing foil. The steel penetrated the left orbit between the inferior orbital ridge and the eyeball. The child was found a few moments later in an unconscious condition, with the instrument still in the wound. It was removed by a servant, and the child was placed in bed.

I saw the case about five hours after the accident. On ophthalmoscopic examination, the eyeball proper appeared uninjured.

There was coma, right hemiplegia, left facial paralysis, complete aphonia; the respirations were 30, the pulse 140, the temperature 104½°. Immediately above and about the center of the left orbital ridge was an incised wound about one-quarter of an inch wide, from which oozed a little blood. An exploration of the wound was determined upon. The patient was etherized, and the cutaneous wound was slightly enlarged. The handle of a Graefe cataract knife, inserted into the wound, sank almost by its own weight to a length of three and one-quarter inches into the wound, taking a direction toward the vertex and the middle line.

Inasmuch as no spiculæ of detached bone could be detected, the probability was that the instrument passed through the sphenoidal fissure, thence entering the base of the brain. The eye was apparently uninjured. There was, however, complete anesthesia. The pupil was dilated and insensible to light.

[1] Read before the Philadelphia County Medical Society, November 25, 1891.

Treatment by venesection, morphine, quinine, strychnine, and other stimulants not controlling the symptoms, thirteen days after the accident trephining was resorted to.

Operation. From the direction taken by the instrument it was evident that it had penetrated the middle fossa, and that hemorrhagic clots should be sought for in that locality. The patient being etherized, a horse-shoe incision, three inches long, was made in the temporal region, down to the level of the zygomatic arch, and the tissues were lifted *en masse* from the bone. The trephine was placed at the middle of the zygomatic arch, and a three-quarter inch segment removed, consisting of the temporal bone and a small fragment of the sphenoid; the dura mater appeared much congested.

To reach the center of the base of the brain for the removal of the suspected clot, a miniature egg-beater, consisting of four loops of platinum wire, had been improvised; this was perfectly malleable, and could be insinuated between the dura mater and the skull without wounding the cerebral structures. Having reached the cavernous groove the instrument could be pushed no further; it was then turned on its axis for the purpose of catching the coagula in its loops. This was effectually accomplished, and about a teaspoonful of clotted blood was removed piecemeal.

Whilst dragging more out, considerable venous hemorrhage took place, most probably as the result of the removal of the clot that had occluded the injured cavernous sinus.

The trephined opening was immediately plugged with iodoform gauze, and a graduated compress applied over it, secured by a tight bandage about the head.

The patient reacted well from the operation; consciousness gradually returned; movement was restored, and speech was resumed.

The improvement was steady and progressive. At the end of three months the patient could sit at table. A secondary plastic operation was performed to close the wound remaining.

Six months after the accident the patient had equal use of both inferior extremities. He was able to stand and to make a few steps without support. The pupil of the left eye was somewhat contracted. There remained anesthesia of the eye and internal strabismus, indicating the existence of an injury to the ophthalmic division of the fifth pair, which supplies sensation to the eye, and an injury to the sixth pair, which supplies the external rectus, thus corroborating the suspicion that the foil had penetrated the spenoidal fissure. The continued improvement warrants the hope of ultimate complete recovery.

REMARKS.—1. From the direction taken by the instrument producing the injury, it is probable that it passed through the sphenoidal fissure, wounded the cavernous sinus, the crus cerebri, and entered the left lateral ventricle.

2. The hemiplegia was due to venous hemorrhage and laceration of the crus cerebri and other structures, no spiculæ of bone being detected.

3. The coma, hemiplegia, aphonia, and progressively unfavorable course of the patient were relieved by trephining, low in the temporal fossa, lifting the brain, and removing blood-clots from the seat of hemorrhage.

4. The vast amount of oozing and secretion from the opening afforded evidence of the great intra-cranial tension and of the absolute necessity of drainage.

5. Consciousness returned shortly after the relief of the intra-cranial tension. Phonation and articulation soon followed.

6. The brain is situated in an unyielding box of the cranium, and, therefore, when exposed to great irritation, little allowance has been made by nature for the resulting expansion (congestion, swelling in other parts). With a view of remedying this condition, if the brain is not in a position to expand freely, as a result of the irritation, drainage should be provided for by trephining, which meets the indication by affording a point of least resistance to the tension within the calvarium.

This principle applies to many cerebral conditions in which symptoms of general compression result from local or general irritation within the cranial cavity. That this principle found a happy application in the present case is evidenced by the great serous exudation that daily permeated the dressings.

7. We wish to emphasize the safety of trephining near the base of the skull, the ease of arresting violent hemorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury.

8. To our knowledge, there is no other recorded case of trephining as low in the temporal region, and removal of clots from the base of the brain.

NITRO-GLYCERIN.

BY C. S. STEWART, M.D.,
OF AMITE CITY, LA.

AN emergency remedy, to obtain the confidence of the physician, must possess the qualities of efficiency and promptness, so that when demands are made upon it the response will justify the confidence. There is one class of emergency cases in which promptness of relief constitutes the battle, and if this necessary relief is not to be had there is frequently a fatal termination. This is in the condition in which a weakened heart already exists and additional work is suddenly thrown upon it, or the tension is increased to such a degree that its work is seriously interfered with. Of the many remedies recommended for such a condition I have found none to act more promptly, reliably, and satisfactorily than does nitro-glycerin.

This agent has the general action of the nitrites in that it "lessens arterial tension and diminishes resistance," and possesses the advantage that its action is more persistent. This quality, according to Dr. Brunton, results because "the whole of it is absorbed without decomposition," and the nitrous acid free in the blood acts powerfully, relieving strain when rupture or fatal interference with function seems imminent.

After using nitro-glycerin for several months in a variety of cases, I am fully impressed with the idea of its importance, and rely upon it with as much confidence as I do upon older and better-known remedies. Three cases will fully illustrate my experience.

CASE I.—N. L., a Creole negro, about sixty years old, previously healthy, was stricken with right-sided hemiplegia, and when seen was speechless and helpless, with his heart as irregular as it was possible to be. Dissolu-

tion seemed imminent, as the extremities were cold, the features congested, and the heart seemed to have more to do than it could accomplish. Nitro-glycerin was administered hypodermatically, and in a very few moments its action was made manifest by an improvement that was continued.

CASE II.—C. L., white, about sixty-five years old, in feeble health, and subject to epileptic seizures, was taken with convulsions of unusual severity, and when seen was unconscious and covered with cold, clammy perspiration; the breathing was irregular and labored; the heart was irregular, the beats feeble and at times almost stopping; the extremeties were cold; and the pupils were insensible to light. Nitro-glycerin, supplemented by external and hypodermatically-administered stimulants, speedily aroused him from his seemingly hopeless condition, and consciousness was regained.

CASE III. will illustrate the beneficial effects of nitro-glycerin in cardiac and renal dyspnea. Mrs. G. was left in a damaged condition by the "grip," the heart bearing the brunt of the attack. Mitral and aortic murmurs were soon heard, followed by slight albuminuria. Matters continued with varying degrees of improvement for about six months, when every symptom seemed suddenly aggravated by unusual fatigue; edema of the extremities developed, until the legs were twice their usual size; there were very distressing dyspnea, great disturbance of the heart's action; fully 50 per cent. of albumin in urine; vision was impaired. The ophthalmoscope showed no retinitis, and there were very few casts in the urine. Among other remedies nitro-glycerin was used for its effect upon the cardiac dyspnea and for the condition of the kidneys, and with prompt relief. Cardiac tonics, diuretic mixtures, and nitro-glycerin were subsequently given with the happiest results.

Reports of the use of nitro-glycerin in asphyxia from coal-gas inhalation, and in threatened death from chloroform, have been sufficiently frequent to justify confidence, the results having been satisfactory and prompt.

In cases of nephritis accompanied by dyspnea, in which a weakened condition of the kidneys would contra-indicate the use of opium or morphine, nitro-glycerin will give prompt relief to a distressing symptom, and at the same time relieve the strain upon a diseased organ.

TRAUMATIC LACERATION OF THE URETHRA.

BY JOHN RODMAN, M.D.,
OF ABILENE, TEXAS.

MR. J. L., forty-five years old, was gored by a bull on October 25th. I saw him at 2 A.M. on the 27th. There was a wound in the perineum involving the structures between the bladder and the rectum. The urethra was so badly lacerated that a metallic catheter introduced into the penile portion was visible for one and a half inches. A slight amount of fecal matter and considerable flatus passed through the wound, the latter for five days.

The depth of the wound was quite two inches greater than the length of the fully-inserted index finger. The lacerated right lobe of the prostate could be distinctly seen.

Urine was passed through the fistula at noon on the 26th, subject to the control of the sphincter. After persistent and futile attempts to find the vesical extremity of the urethra, I was compelled to aspirate the bladder from above the pubes. This was repeated twice daily, until the 29th, when a dome trocar was left in position for two days; subsequently urination fortunately took place through the wound and has since so continued. The development of gangrene necessitated the removal of considerable perineal tissue. The wound is now suppurating freely, and is otherwise in good condition. Prior to my last visit I anticipated that I should be compelled to enter the bladder through the abdominal wall and pass through the urethra a Nélaton's catheter, with a window at the level of the urine and fastened in the abdominal wound, as it was all-important to secure drainage at the perineum without puncturing the bladder from below so as to avoid dribbling. This contingency was averted by the fortunate escape of urine through the perineum before my arrival.

Now the problem is, can the vesical and penile ends of the urethra be united? Will the wound heal over a catheter retained for the time necessary for the healing of such an extensive wound? Can I expect any better result than a perineal fistula with control of the discharge of urine? I think not.

[It would seem wise to introduce a catheter into the bladder and give the wound the opportunity to heal over the instrument. Whether the two ends of the urethra could be united by a plastic operation is a problem that could not be solved unless the patient were seen. If this is not possible and the patient had not control of the perineal fistula, the next best thing would be to open the bladder above the pubes and establish an oblique urethra in the abdominal wall.—ED.]

TRACHEOTOMY FOR A MELON-SEED IN THE TRACHEA.

BY L. HUFFAKER, M.D.,
OF DAISY, TENN.

A BOY, about three years old, while eating a piece of watermelon, became strangled, and sucked a seed into the trachea. The father brought him to me on July 7th for the purpose of having the seed removed. I located the seed as having passed below the vocal bands, and advised tracheotomy. Dr. Frank Trester Smith, of Chattanooga, performed the operation.

The patient was etherized, and an incision about one inch long was made in the integument. The sterno-thyroid and sterno-hyoid muscles were next separated from each other, and the cervical fascia and the thyroid plexus of veins were exposed. After controlling the hemorrhage, the trachea was opened from below upward for about three-quarters of an inch, and the seed removed. The incision in the trachea was then closed by one suture, and the incision in the integument was closed with four sutures; the wound was dressed and left for the night.

On the following morning I found some swelling, both internal and external. After bathing the parts well with carbolized water and Castile soap, I applied an ointment of vaselin and iodoform, prescribed a laxative, and directed a liquid diet. The temperature was about a degree above the normal.

On the morning of the 10th I found the patient suffering from considerable constitutional disturbance, the tempera-

ture being 2½° above the normal; the tongue was somewhat coated, and the bowels were constipated. I dressed the wound as before, and found granulations springing up. A laxative and some quinine were prescribed. On the morning of the 11th the temperature was about normal; the patient had rested very well during the night. I removed the dressing and found the wound suppurating nicely. I cleansed it again with carbolized water and Castile soap, and applied an ointment of iodoform, bismuth subnitrate, and vaselin.

On the morning of the 11th I removed the deep suture and dressed the wound as before.

On the 14th I removed two of the superficial sutures, and on the next day I removed the rest. I now discontinued the iodoform, and used as a dressing an ointment composed of bismuth subnitrate, vaselin, and carbolic acid, which I continued until I discharged the case on or about July 19th.

A CASE OF MALARIAL HYPERPYREXIA.

BY JAMES A. TURNER, M.D.,
OF LITTLE'S MILLS, N. C.

ON September 5, 1891, I was called to see a negro child about two and a half years old, living in an intensely malarial locality. I found the child with the muscles of the neck, trunk, and extremities in a state of rigidity, its eyes fixed and pupils dilated. At intervals of about thirty minutes, there were paroxysms of general convulsions, which would subside in about one minute, when the child would again lapse into the former condition in which it had been twelve hours. The parents stated that it had had chills for several days, and that the day previously it had several violent convulsions. I found the temperature in the axilla to be 106°, the pulse small, and so frequent that I could not correctly count it. Thinking the convulsive condition due to the hyperpyrexia, I applied cold cloths to the head and administered antipyrin hypodermatically, repeating it in thirty minutes, without any results. I then ordered the child to be placed in a tub of water just from the well, but owing to the small size of the tub and the rigid condition of the patient, I could only get it into the water to the knees. I therefore poured water from a vessel on its head, and in a short time it was sufficiently relaxed to be well covered with water, from which it was taken in eight minutes, sleeping soundly. It was dried and put to bed, the thermometer in the axilla showing a temperature of 101°. I gave calomel and quinine, and directed bromide of potash to be given through the night, and quinine in the morning. I called to see the patient on the following day, and found it in every way doing well, with the temperature normal. It was quite well in a few days.

RAT-TAIL SUTURES.

BY E. OLIVER BELT, M.D.,
OF WASHINGTON, D. C.

ABOUT five years ago, while resident physician in the Presbyterian Eye and Ear Hospital of Baltimore, I saw Dr. Chisolm uses fibers from the tail of an opossum for sutures in some of his eye-work. I thought such fibers a good substitute for silk, and spoke to my brother, Dr. A. M. Belt, about it. Shortly afterward a rat was caught at his residence; he had the tail skinned and soaked for several days in water, after which, upon slight manipulation, it separated into perhaps a hundred fibers, each about eight inches in length. These were placed in alcohol and presented to me, upon request, for use in eye surgery. I found the fibers strong and much finer than those from the opossum tail, or any other animal suture, and have been using them quite extensively in suturing the conjunctiva in pterygium operations, and in advancing the recti muscles in correcting strabismus.

These sutures have been most satisfactory. As soon as moist they become agreeably soft to the eye, and have never to be removed, while silk sutures are rough and irritating as long as they remain in the eye, and their removal is somewhat painful. Patients from a distance are often detained five or six days to have the silk stitches removed, when rat-tail sutures might be used and the patient allowed to depart immediately. These sutures will no doubt be found useful to the general surgeon and gynecologist when they need strong and fine animal sutures. About once a month, for two or three days, I soak the fibers in a corrosive sublimate solution (1 : 5000), and as I have never had any trouble whatever from their use, I think it probable that this suffices to render them aseptic.

ENUCLEATION WITH COCAINE.

BY JOHN L. DICKEY, M.D.,
OF WHEELING, W. VA.

I HAD a patient recently, a man aged forty, whose right eye had to be enucleated on account of a sloughing cornea resulting from an injury. As he had an organic heart disease I was afraid to use ether or chloroform. We proceeded slowly, dropping a four per cent. solution of cocaine from a pipette as we progressed, and within ten minutes succeeded in removing the ball with very little, if any, pain, and with the use of less than a dram of the cocaine solution. The patient showed none of the constitutional effects of cocaine, and made a rapid and satisfactory recovery.

MEDICAL PROGRESS.

The Treatment of Goiter by Enucleation.—LEHOTZKY (*Wiener klin. Wochenschr.*, Nos. 41 and 42, 1891) has tabulated sixty-two cases of enucleation of the thyroid gland, performed during six years at the clinic of Albert, at Vienna, partly on account of distressing symptoms occasioned by the goiter, and partly for cosmetic reasons.

In thirty-three cases the goiter was firm; six were in men, twenty-seven in women; the operation was successful in thirty-two; one case died.

The size of the nodules varied from that of a hazelnut to that of a man's fist. In one case the gland was as large as a child's head, and was suspected to be malignant, but the excessive size was found to be due to the presence of a cyst. The capsule of the gland was of varying thickness; in one case it was almost two inches thick. In most cases the limitations of the gland were well defined. Frequently there were band-like adhe-

sions, necessitating the employment of scissors, knife, and ligature. The most important and most dangerous element of the operation is hemorrhage. Slight capillary hemorrhage is the rule, even if the greatest care be exercised. In rapid operations the hemorrhage was always profuse; in such cases the wound was packed with iodoform-gauze and the vessels ligated. In all cases absolute hemostasis was secured. By ligating the various strands of adhesion before dividing them, and by treating the pedicle of the tumor in the same way, the operation may be made a bloodless one; but such a mode of procedure requires much time and more patience. In only one instance was parenchymatous hemorrhage encountered. Secondary hemorrhage occurred once. In one case the hemorrhage was so profuse that the carotids were exposed for ligature. In one case death resulted on the day after the operation, from the entrance of air into a ruptured vein; at the autopsy pneumonia and emphysema were found.

In twenty-nine cases the goiter was cystic; four were in men, twenty-five in women; in most of the cases (fifteen women) the patients were between twenty and thirty years old; the operation was successful without exception.

After division of the skin, one or more thin membranes were usually found; these were incised and the cyst dissected free; a true capsule was found only in cases in which there were also firm nodules or parenchymatous hypertrophy. Thin-walled cysts occasionally ruptured, discharging their contents over the field of operation. The removal of the empty cyst may be easy or difficult. In one case it was necessary to suture the cyst-wall and the skin; in another, to permit calcified, adherent portions to remain. The difficulty of the operation was increased when a portion of the cyst was seated behind the sternum. In one case, in which injections of iodine had been unsuccessfully made, enucleation was subsequently performed without difficulty. A suppurating cyst was successfully removed. Hemorrhage was, in general, less than in the enucleation of solid goiters, although in some cases it was profuse. In one case secondary hemorrhage occurred.

The enucleations were made with the assistance of chloroform-narcosis. In a number of cases of small tumors, local anesthesia induced by cocaine proved sufficient. Restlessness of the patient increased the difficulty of the operation. One death occurred from chloroform-narcosis following an enucleation easily and rapidly performed. The incision in the skin was made from above downward, over the most prominent portion of the tumor. Catgut was employed for ligatures, silk for sutures. When the enucleation was completed and hemostasis had been secured, a strip of iodoform-gauze was loosely laid in the wound, the extremity being brought out at the lower angle, and the skin was sutured. When the gauze was removed, the drainage canal was permitted to close by granulation.

The advantages claimed for the operation are: (1) that through a single wound several nodules or cysts may be removed; (2) that the recurrent laryngeal nerve is outside of the field of operation, and is exposed to no risk of injury; (3) that in many cases the operation is readily performed, and the course and result are satisfactory; (4) that sufficient glandular structure remains to afford assurance against the development of the cachexia strumipriva.

In cases in which the goiter was constituted of several divisions that included the entire gland, only those portions were removed that occasioned symptoms.

The Restoration of Defects in Tendons.—KÜMMEL (*Wiener medizin. Presse*, No. 43, 1891) has reported the case of a coachman who, while managing a pair of balky horses, perceived a sense of pressure, followed by severe transitory pain, involving the whole of the left arm. Shortly thereafter a swelling appeared in the region of the left wrist-joint, the functional activity of the hand, however, remaining unimpaired. Several hours later severe pain in the left arm appeared. The thumb hung limp, and could be neither adducted nor extended; it felt numb and cold. The injury was considered a luxation, and treated by means of applications of lead-water. At the end of three weeks there remained no doubt that the extensor pollicis longus had been ruptured. Upon opening the sheath of the tendon it was found that the central extremity had retracted to the middle of the forearm. The distal extremity lay rolled up on the metacarpal bone of the thumb. Attempts to approximate the two segments proving unsuccessful, the diastasis of almost four inches was supplied by moderately strong, twisted silk thread. The wound in the skin was closed and the extremity was dressed in hyperextension. The first change of dressings was made at the end of two weeks, the position of hyperextension being from time to time gradually relaxed. At the end of six weeks the splint was permanently removed, and movement was carefully instituted. In the course of four weeks more the patient was able to use the thumb with considerable force. The case demonstrates the possibility of replacing defects of tendons by non-vital structure, with restoration of function. It is possible that the silk threads furnish a guide and support for the connective tissue that is to replace the defect.

A Glioma of the Pons Varolii.—WILLIAMS (*Bristol Medico-Chir. Journ.*, September, 1891) has reported the case of a boy of six, who, it was observed, had become tiresome and fretful and manifested some awkwardness of gait, with a tendency to stumble and subsequently to rotate. The face was drawn a little to the right; the right eye presented convergent strabismus; the pupils were large and inactive; the left optic disc was blurred; the tongue was protruded in the median line; the knee-jerks were normal; the grasp was good and equal on both sides. No complaint of headache was made. The boy was restless during sleep, kicking off the bed-clothing. He was irritable and had outbursts of bad temper. There was no vomiting and no vertigo. Hearing was unimpaired. The urine had a specific gravity of 1030; it contained no albumin, but a trace of sugar. The symptoms progressively advanced; twitching of the muscles of the face appeared; paresis of the left side developed; vomiting occurred on two occasions; the muscles supplied by the right sixth nerve became paralyzed; the left knee-jerk became exaggerated. Death ultimately resulted amid the symptoms of exhaustion. At the autopsy the ventricles and the subarachnoid space were found distended with fluid. The pons was

the seat of a new growth that involved especially the right half. The crura were enlarged, the right crus especially. The third nerves were flattened. The sixth nerves were displaced, particularly the right nerve. On histologic examination the tumor proved to be a typical glioma.

Primary Scleroma of the Larynx.—JUFFINGER (*Wiener klin. Wochenschr.*, No. 41, 1891) has recorded the case of a girl, seven years old, who presented herself complaining of hoarseness, which, it was stated, had followed an attack of severe, persistent pain in the chest lasting three months, for a considerable portion of which the child was compelled to stay abed. Upon laryngoscopic examination, a tumor was found below the right vocal band, attached to the posterior wall of the larynx, and projecting forward and to the left, by its presence preventing the apposition of the vocal bands. The child disappeared from observation for nine months, finally returning on account of increasing dyspnea, with which aphonia was associated. The tumor had meanwhile undergone enlargement, and the lumen of the glottis was much obstructed. The surface of the tumor was smooth, its color pale-red, its consistence firmly elastic. A diagnosis of scleroma was confirmed by the results of bacteriologic and histologic examinations. No other abnormalities were found in the respiratory tract.

A second case of primary scleroma of the larynx was observed in a boy, thirteen years old, who, it was stated, had been hoarse for six months. Examination revealed the existence of so-called subvocal chorditis, the vocal bands presenting inferiorly great prominences that came in contact anteriorly, leaving but a small free space posteriorly.

Treatment of Myxedema by Means of Hypodermatic Injections of an Extract of the Thyroid Gland of a Sheep.—MURRAY (*British Medical Journal*, October 10, 1891) reports a case of myxedema in a woman forty-six years old, in which manifest improvement took place in the course of the subcutaneous administration of an extract prepared from the thyroid gland of a sheep. The thyroid gland of a sheep is removed immediately after the animal has been killed, and is separated from the surrounding connective tissue and fat. The gland is cut into small pieces and placed in a test-tube containing fifteen minims each of pure glycerin and of a 5 per cent. solution of carbolic acid. The mouth of the tube is closed by a plug of cotton-wool. The mixture is allowed to stand in a cool place for twenty-four hours, and is then expressed through fine linen or gauze. The extract obtained should be kept in a bottle with a glass stopper, and remains fresh for a week. Twenty-five minims may at first be injected twice weekly. Subsequently the injections, which are conveniently made into the loose connective tissue between the scapulæ, need not be made so frequently.

The Temperature of Epileptics.—Before the Congress of Mental Medicine, MAIRET and BOSE (*La Médecine Moderne*, No. 35, 1891) reported that as a result of a series of observations upon epileptics kept in bed, the temperature being taken every fifteen minutes, they had determined that the temperature undergoes no change in anticipation of a paroxysm. During the attack they were able to distinguish two periods: a convulsive and a stertorous. The former was attended with a lowering of the temperature if the seizure was a severe one; but, if the attack was mild, there was little alteration of the temperature. In the period of stertor the temperature rose three or four tenths of a degree, but this elevation was but relative, as the temperature was actually lower than the mean temperature on days on which no attacks occurred. After the attack the temperature returned to or exceeded slightly the normal. The mean temperature was a little higher on the days on which attacks occurred.

The Constitution of the Sweat.—From a study of the constitution of the secretion of the sudoriferous glands, GAUBE (*Comptes Rend. des Séances de la Soc. de Biol.*, November 6, 1891) has found that the sweat is of acid reaction in man, but alkaline in the horse, the cow, the dog, the cat, and the pig. Both in animals and in man the secretion contains albumin. The total amount of nitrogen in the sweat is greater than that represented by the contained urea; the excess is largely due to the presence of albumin and albuminoids. In man and in animals the sweat contains diastasic ferments, which are called hidrozymases. In man there are three—an amylase, a pepsin, and an emulsin; in the horse there are two: an amylase and an emulsin. The sweat of man contains little amylase, less pepsin, and still less emulsin; that of the horse and of several other animals contains less hidrozymases than does the sweat of man.

Endocarditis following Circumcision.—CZERNY (*Prager med. Wochenschr.*, No. 39, 1891) has reported the case of a child, of Israelitish parents, that was without antiseptic precautions circumcised on the fourteenth day after birth, and two weeks later presented restlessness, apparent difficulty of breathing, elevation of temperature, and loss of weight. On auscultation over the body of the heart, systolic and diastolic murmurs were heard, but the organ was not enlarged. The diastolic murmur subsequently disappeared and cardiac hypertrophy developed. Prior to the operation the heart had been auscultated, and no murmurs were heard; so that the etiological association between the operation and the endocarditis was quite clear.

Double Subacute Glaucoma.—Before the London Ophthalmological Society, CRITCHETT (*Lancet*, October 24, 1891) reported the case of a woman, twenty-nine years old, in which, within twenty-four hours after a severe shock, there was felt intense pain in both eyes, with vomiting and loss of vision. The eyes soon became densely hard, the pupils dilated, and the media so hazy as to interfere with a satisfactory view of the fundus. There was doubtful perception of light. The results of operative interference were not encouraging, and it was at the urgent solicitation of the patient and her mother that a double iridectomy was performed. The wounds healed favorably, but the recovery of vision was gradual and slight. The discs subsequently showed moderate cupping. At the end of fifteen years little further change had taken place.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 5, 1891.

SHOULD REPUTABLE PHYSICIANS ADVERTISE AND SHOULD MEDICAL JOURNALS PUBLISH THE ADVERTISEMENTS?

THE *Journal of the American Medical Association* prints the card of a physician, and in addition gives a generous and flattering editorial "reading-notice" of its patron.

This is the fact that every American physician has to look squarely in the face, estimate at its proper value, and decide what he is "going to do about it."

Of course, far worse things are every day being done by journals that by straining the English language may be called medical. Men eaten up with vanity and self-seeking may publish their own portraits, with uproariously laudatory autobiographical notices, may write or hire the writing of wonderful puffs—"reviews"—of their own books, may found societies, and elect themselves officers of the same, and all that. To such we have become habituated, as to the foul smells of dirty streets.

But the journals that do these things are not labelled "American" in an official sense, are not the official organs of supposed reputable medical societies, and do not claim for their advertisers anything more than good looks and personal popularity. Such things deceive only those that would be fooled by the portrait of the patent-medicine man and that see a logical connection between a man's picture and his therapeutic power, or that of his nostrum.

There is an apologetic tone about the *Journal's* "reading-notice" that apparently would excuse the advertisement on the ground that it is "only a plain professional card without puff, etc." One cannot help thinking of Thackeray's character, the girl that thought her mistake should be condoned because her illegitimate child was such a very, very small baby.

According to DR. GAINES's letter in the *Journal* there are at Hot Springs some seventeen regular and reputable physicians to some forty irregulars. In justice to themselves the remaining sixteen regulars must now insert their cards in the *Journal* or be out-generalled by the single one who has started the ball a-rolling and who receives the *Journal's* commendation. Moreover, the *Journal* must insert their cards; and, if just, must also give a eulogistic editorial "reading-notice" equally as long for each as for its first advertiser. On what grounds also can it exclude the irregulars? There are all degrees of irregularity. The insertion of the one "reading-notice" and card logically establishes the *Journal* as a self-constituted judge of reputability and regularity, unless it consents to take the advertisement of the out-and-out quack as well as that of the non-advertising physician. It would seem a strange logic that would permit the advertisements—"limited"—of the reputable and exclude those of the non-descripts and disreputable. That is giving away the whole cause and slipping the leash off the necks of the whole pack of would-be advertisers.

The affair aptly illustrates the danger that besets the question of the most limited of advertising, and also of the false ethics of the rule of doing evil that good may come, or of meeting the principleless advertiser with the weapons of his own forging. We do not mean to imply a word against the reputability of the single Hot Springs physician that has hired the advertising columns of the *Journal*. That is a question wholly irrelevant. But if one of the seventeen may or should insert his card with a "reading-notice" in one journal, the other sixteen should and must do the same, and not only in one medical journal, but in all. And if in medical, why not in the lay newspapers? And if only a card, why not the specialty? And if so much, why not a list of the cures, real or imagined? It is absolutely impossible to draw the line between limited and

unlimited advertising, or between advertising by an ethical-code-loving physician for a good purpose and by a sharper and a quack for his unlimited self-interest.

Moreover, every honorable physician in the land is waging a ceaseless struggle, often hard—and, because against secret enemies, often more hard—with quacks, and especially with the quacks inside the profession, who in sly ways are daily advertising themselves, but who are always careful to keep clear of the open methods that can be found out or proved. If the Hot Springs practitioner is logically right, or reluctantly forced by his beastly competition to advertise, so has each of us the same right and the same need.

The honorable physician at Hot Springs certainly has a hard lot; we sympathize with him most deeply and sincerely, but the way out of it all is not that unwisely inaugurated by the *Journal* and its advertiser.

TOTAL ABSTINENCE, OR THE MODERATE USE OF ALCOHOL?

ALL London, and indeed all England, has for several months been greatly excited over the outspoken advocacy by DR. J. MORTIMER GRANVILLE of the moderate use of alcohol. The newspapers have been filled with letters and articles from "all sorts and conditions of men" advocating with fervor every phase of opinion concerning the question—every phase except downright drunkenness. The numerous advocates of intoxication are too busy in translating theory into practice, and thus illustrating the possible genuineness and excellence of their creed, to theorize and write about it! The thesis of GRANVILLE is, in a word, that those that practise teetotalism are white-livered, cowardly, good-for-nothing, despicable beings, and that only the drinkers are the conquerors of nations, of ignorance, and of barbarism. He says:

"Abstinence, all the world over, and in all ages, has taken, and still takes, the backbone out of a man, and leaves him a limp, invertebrate animal with a pulpy brain, a feeble intelligence, and a will which lacks the power to assert its authority over the instincts and propensities it was made to control."

That this is an outrageously exaggerated and positively untruthful statement cannot be doubted by anyone that knows history or men and that judges dispassionately.

And yet that there is much justification for the essential basis of GRANVILLE'S crusade there can also be no denying. We all have in mind the ghastly nightmare of a theory lately hurled at the world by the great TOLSTOI. According to this psychologist alcohol and tobacco are the agents made use of by the inherently devilish will of man and of humanity to murder in self the voice of conscience and of God, and thus indirectly to license the unrestrained domination of innately evil appetites and desires. The world smiled pathetically or sardonically at the preposterously rabid exaggeration of the morbid Russian. And yet, again, despite the over-emphasis and the untruth, here too there is much that serves as a justifying and supporting basis of the theory. Those that deny it any logical or *de facto* value are, in a limited way, most probably practising on themselves the horrid game that TOLSTOI so vehemently describes.

There can be no blinking the patent fact that, as human nature is now constituted, men, many men, all too many men, cannot resist the temptation to use too much alcohol, if its free use be allowed and encouraged. Whether they will or not, the "moderate users" encourage themselves or others to become immoderate users. GRANVILLE and all those of his way of thinking forget or minimize this fact. They contend for the right of private judgment in a matter that, by fatal and fateful necessity, at once becomes public judgment.

He that loves his fellow-men will acknowledge the righteousness of the Pauline maxim that if meat maketh one's brethren to offend, then he should not eat meat.

This last farrago of nonsense, that only by drinking alcohol can one become strong in will and great in deed, is unqualifiedly false. It is logically a pure *non sequitur*. Power of character may or may not coëxist with the limited use of or total abstinence from alcohol. Had strength of character been dependent upon alcohol, the evolutionary forces of Nature, the Mind behind minds, would have offered man the finished food-product, instead of the grain and the fruit and the flesh so admirably perfected.

On the other hand, the total abstainers forget one important fact: an old justification of Catholic faith and tradition is founded on the motto, *Quod semper, quod ubique, et quod ab omnibus*—what has always, everywhere, and by all, been believed, must be true. There is a profound reason for the belief that the very widespread, if not universal, use of alcohol in

all ages and by all peoples corresponds to some deep need and use. A strong and universal appetite must have its *raison d'être* in some physiological utility, which neither the pathological degradations of drunkenness nor the heroic zealotry of prohibition can either wholly cancel, perfectly conceal, or effectually disprove.

In the exercise of their calling, in dealing with disease, physicians have no manner of doubt about istered with judgment and discrimination. With a the efficacy and therapeutic value of alcohol adminsingle eye to their patients' good, they will certainly continue so to advise its use.

But in a certain true, though limited, sense, senility is a pathological condition, and the sense in the justifiable, half-therapeutic, half-hygienic use of which it is pathological points the indication for alcohol. A very wise man put the rule into an apothegm, too sharply drawn indeed, but expressive of the physiological law: "No man should use alcohol before he is forty-five years of age; everyone should use it after this age." Is it not true that usually, and under normal circumstances and strains, Nature endows the young with such assimilative powers, such a capital stock of vital energy in the bank of organization, that up to an indefinite time in life the common foods are sufficiently powerful and assimilable to fit the body to cope with the severest tasks and the mind to fulfil the most exacting duties? Is it not also true that a time comes, usually between forty and fifty, when the reserve forces seem less spontaneous or so easily exhausted that the readily oxidizable food and hourishing stimulant that we call alcohol is not only useful, but quite often absolutely essential to the continued functions and demands? Does not this suggestion point to a harmonization of the views of the extremists, and to serviceable and rational use befitting discriminating and dispassionate minds, whether lay or professional?

THE PLACARDS AND EXHIBITIONS OF FREAKS AND MONSTROSITIES.

Popular exhibitions and liberally displayed advertisements of monstrosities raise the very pertinent inquiry as to the effect of such sights on unborn children. While there is a want of unanimity of opinion as to the exact manner in which monstrosities are produced, there is no reasonable doubt that certain powerful reflexes, causing strong emotions in the mother, may result in their production. It is to be said, however, that the element of active fear has generally been markedly present in cases in which the sight of a strange or terrible object has been followed by the birth of a deformed child. A notable instance of this sort was found in the person of the "Elephant Man," who has been the rounds of the London hospitals: while visiting a menagerie his mother was greatly terrified by an elephant, which seemed about to attack her; at birth the infant's face resembled that of an elephant, and his skin presented some of the characteristics of the animal's hide. So shocking is his appearance that he is debarred from any occupation, and subsists upon the charity of the various hospitals.

Monstrosities most often result from a visual reflex, the terrifying object or occurrence having been seen; they may also develop when emotions of fear or grief have been excited by the description of a horrible object, or the narration of a fearful occurrence. Thus, in the observation of the writer, a mother who was shocked by hearing that a friend had been thrown from his horse against a dray and had his skull fractured, gave birth to a child that presented red sensitive areas upon the scalp, corresponding in location with the fracture of the skull in the person whose death had so alarmed the mother. In the *British Medical Journal* of September 19th there is an account of a case in which a pregnant woman, having been shocked by seeing four children, all of one parent, affected with talipes varus, gave birth later to twins, each of which presented double talipes varus. The *Medical Mirror* of November, 1891, reports a strange case of entire absence of the calvarium in a child, the mother of which had a conviction that the child would be thus deformed, because while pregnant she had been deeply impressed by a picture in a phrenological book showing the brain with the skull removed.

The question whether seeing a picture of such a monstrosity as Laloo would influence an unborn child cannot be categorically answered for all cases. There are women who would look upon such illustrations without emotion, while others would be shocked and terrified. There is no doubt that there is sufficient warrant for the belief in the power of hideous sights, through maternal impressions, to affect the fetus, and that the outrageous placards of the dime-museum freaks and monsters should be regulated or forbidden. The exhibition of such monstrosities to miscellaneous audiences should not be permitted, while scientific men should

be given the fullest opportunity of investigation. In general, it is doubtless true that those sights and occurrences that threaten the mother's safety and cause intense fear are those that are most influential in producing monstrosities. Among these, actual or threatened attacks by animals are especially potent, the monster resembling the animal that frightened the mother. A similar effect, less in degree, may be produced by the narration of a terrible occurrence or by the description of a hideous object. An interesting application of a belief in the potency of visual and auditory impressions during pregnancy to affect the fetus is afforded by the usages of the ancient Greeks, who were wont to surround the pregnant woman by such environment as should through sight and hearing give access to the brain of agreeable sensations only. The perfection of form that characterized the youth of ancient Greece bears witness to the influence of visual impressions upon the unborn child.

CORRESPONDENCE.

"WASHINGTON AS A MEETING-PLACE."

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of November 14th will be found a letter from Dr. S. Weir Mitchell on the subject of the prevalence of diarrhea at Washington, D. C., during the session of the Medical and Surgical Congress which adjourned on the 25th of September last. Dr. Mitchell mentions the fact that the same epidemic influence was present at Deer Park, Md., and also at Newport, R. I., both of which places he visited immediately after the adjournment of the Congress. With equal propriety he might have called attention to other localities in the North and West, where it prevailed at the same time.

He advocates Washington as the proper and only place where this Congress should hold its sessions; and rightly so, because this is a national organization, and the Capital of the country is the most appropriate place for its triennial sessions.

The charge against the water of that city, of being the cause of the diarrhea from which so many suffered during the session of the last Congress, is not sustained by facts. It just so happened that at the time the Congress was in session, from the 22d to the 25th of September, there was an unprecedented spell of hot weather—verily *a heated term*—which extended all over the North and Northwest: a spell of weather unlike any before experienced at that season of the year. Was not this heat a potent factor in causing the bowel affections, which were not to be found in Washington alone? As a proof that the water was not the cause, we can cite the fact that the American Surgical Association has held its annual sessions in that city since April, 1884. I have attended each and all of its sessions, and I have never heard that its Fellows have been made ill by the water. The American Medical Association held its session of 1884 and also its session of 1891 in that city; the Ninth International Congress met there at its last meeting in America; and several of the special associations, especially the Association of American Physicians, have assembled there for several years, yet none of these Associations has ever before objected to the water as unhealthy or productive of diarrhea. It is true that in 1888, when our Congress held its first meeting in that city, there was some complaint of diarrhea and bowel troubles—but that year, as this, was noted for its very warm weather late in September. Imprudence in diet was as much at the bottom of the bowel troubles as the water drunk.

Our last Congress is conceded by all who were present to have been a most brilliant meeting, one which will yield an abundant harvest of rich scientific results. Washington City is one of the most beautiful on the continent; well paved and thoroughly drained; interspersed with large parks, which purify the atmosphere and render it attractive as well as healthful. It is a city of residences, rather than a busy mart of commerce; it is a center of social refinement and destined to become the focus of intellectual and scientific work in the Western Hemisphere. This being true, it is the proper and only place where this Congress should meet. Composed, as this Congress is, of the representative leaders of medical thought in America, it is likely to exert a powerful influence upon American medicine and surgery, and should hold its sessions at the National Capital. Since objections have been raised to its meeting in September, all obstacles can and will be removed by holding its triennial sessions either in May or June, when all will agree that the weather is especially delightful in that city.

There is not much danger of the Congress being destroyed by the water of Washington.

I am, very truly,
CLAUDIUS H. MASTIN.

MOBILE, November 16, 1891.

TOXIC EFFECTS OF ATROPINE.

To the Editor of THE MEDICAL NEWS,

SIR: A year ago a son of mine, a young man of twenty-three, went to St. Louis to study dentistry. Having some ametropia, he consulted an oculist, who for diagnostic purposes directed him for a few days to instil into the eyes a solution of atropine (gr. iv to ℥j). After a number of instillations, toxic symptoms manifested themselves. The boy became delirious and at times lost his way in going from place to place. There were also febrile symptoms. The mental disturbance lasted for several weeks. At the end of six weeks the young man was sent home, when it was found that he was suffering with small recurrent abscesses of one of the external auditory canals, which gave him much distress for probably two or three weeks from the time of their first appearance. Following this, he slowly and gradually improved and now appears well. His improvement was at times, however, marked by such irritability of temper that I suspected some mental derangement. His memory, which before was excellent, was much impaired for a number of months, and now seems not so good as formerly.

Applying recently for life insurance, his application was rejected by the medical director on account of the history of atropine-poisoning.

The action of the medical director was based upon an unusually unfavorable experience with cases of atropine-poisoning, an abstract of which accompanies this letter. Respectfully,

VIRGIL MCDAVITT.

VIRGIL MCDAVITT, M.D., Quincy, Ill.

MY DEAR DOCTOR: In answer to your letter, I will say that my experience in atropine-poisoning is unquestionably an unusual one.

My first case was in a child about six years old, poisoned by eating the seeds of the deadly nightshade. It was a severe case, although it rallied from the first effects; still there seemed to result a derangement of the digestive organs from which the child never recovered. It remained comparatively well for some two years and a half, dying apparently from the more acute attack of gastritis.

My second case was in a man, about forty years old, who had a severe attack of iritis. He was under treatment and had a solution of atropine to drop in the eye occasionally. By mistake he took an overdose by the mouth and in a short time was in the peculiar condition of one who has been poisoned by this drug. After some days of delirium he recovered so far as to be considered out of danger. The iritis continued a number of weeks longer, but it was finally recovered from. From that time, however, he had occasional attacks of delirium, and was finally so broken down mentally and physically that it became necessary to send him to an insane asylum, in which he died after the lapse of a year and a half or two years.

My third case was in a woman about thirty-five years old, with some uterine disorder, in the treatment of which an ointment of belladonna was applied to the internal surface of the uterus. After the application, vision became decidedly impaired; the woman staggered, and was finally carried home from the street in this condition. For some days the symptoms were alarming, but under treatment the woman rallied, and at the end of two weeks seemed to have recovered. She was, however, never as strong as before the accident, and suffered frequently from alarming attacks of hysteria; her physical health failed, and in about three or four years she died.

My fourth case was in a man, over sixty years old, who by mistake took a large dose of atropine, supposing it to be a preparation left by his physician to quiet the pain of neuralgia from which he was suffering. He became delirious very soon afterward, and in the course of from a half to three-quarters of an hour profoundly comatose. By the use of the stomach-pump and other measures he rallied, after lying in an unconscious condition for some two and a half hours, and in the course of a week or ten days, although he was weak, he was apparently free of the effects of the poison. He never fully recovered, but lived for some three and a half years, dying of apoplexy. After having taken the poison he was never quite as clear in his mind as before.

These are the cases to which I referred. I have never observed a case of severe poisoning from the application of atropine to the eye. The case of the woman referred to may, perhaps, belong in the same class, as it was one of poisoning by absorption from the mucous membrane of the uterus and vagina. I have never observed a case followed by abscesses of the auditory canal.

I know of no antidote for the effects or after-effects of poisoning by atropine. Opium antagonizes the primary effects, although I do not believe that the poisonous effect of the atropine is overcome by the opiate; neither do I believe atropine to be an antidote in opium-poisoning. I have always felt that the best we can do for the after-effects of atropine-poisoning is to treat the patient on general principles, trying as much as possible to overcome the debility and mental agitation by the usual mode of treatment. Very truly yours,

THOS. A. FOSTER.

WORMS IN THE AUDITORY MEATUS.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of November 21st I notice a communication from Dr. James Mitchell, concerning "Worms in the Auditory Meatus," that recalls to my mind the following case. While attending lectures at the Bellevue Hospital Medical College, New York, in 1878, a patient was brought into the lecture-room suffering from some sort of ear trouble. Professor Alexander B. Mott was the physician-in-charge. The patient was a male, white, about thirty, and evidently belonged to the lower walks of life. On being questioned by Professor Mott as to his ailment, he replied that he suffered from pain in one of his ears, and that in addition there was at times hemorrhage from the ear. These symptoms had been present during several weeks.

The lecturer took an ordinary ear-speculum, and in the meatus saw something that brought to his face a mingled expression of surprise and disgust. Still holding in place the speculum, with a light pair of dressing-forceps he picked out worms from the patient's auditory meatus, and laid them on the table. I do not recall the number, but there were certainly as many as six or seven, each about from three to six lines in length, and from half a line to perhaps a line in thickness. They were not of a perfectly white color, but of a brownish-white.

On questioning the patient as to his occupation, he replied that he was employed in a flouring-mill, and that every day he had been in the habit of lying down on top of a wheat-bin, during his "nooning," and sleeping for half an hour or longer. The lecturer thought the worms must have been weevils—or some other insect of this nature—from the grain underneath the sleeper, and ova deposited therein.

C. A. JOHNSTON.

HOPBOTTOM, PA.

NEW MEXICO AS A HEALTH RESORT.

To the Editor of THE MEDICAL NEWS,

SIR: The medical world has been reluctantly forced to turn its eyes from the German laboratories again to hygienic, supporting, and especially climatic treatment for chronic pulmonary diseases. It is admitted by intelligent observers that climate is the first factor in the successful

treatment of all chronic lesions of the broncho-pulmonary tract. At this opportune period let us have a more thorough and accurate knowledge of the climate of our own country. To this end we offer some brief observations on the climate of New Mexico, especially of that part of the Territory in the vicinity of Albuquerque. As the American Health Resort Association has reported favorably on Albuquerque as the location for its sanitarium for patients suffering from chronic pulmonary diseases, a few observations by a resident practitioner of this city may be of interest. Why New Mexico as a health resort has previously occupied such a limited space in American works on climatology is hard for the physician to understand who has personally experienced the dry, bracing, delightfully salubrious air of its valleys, table-lands, and mountains, and has seen its effects upon patients. With ten thousand inhabitants, Albuquerque is five thousand feet above sea-level, on the left bank of the Rio Grande, extending from the valley proper to the high table-land. It is twelve miles from mountains that are from seven to nine thousand feet high, issuing from the bases and cañons of which are a series of mineral springs, which in variety and quantity of medicinal ingredients will compare favorably with those of any springs of the same area on the continent. North of the city, extending from thirty-five to eighty miles, is another series of mineral springs, the waters of which cover a wide range of ingredients, the waters of some of which are thermal, others cold. The waters from some of these springs are bottled and shipped to some extent, though not so much as their virtues warrant. The waters from many of these springs, in which the natural senses detect strong medicinal properties, have never been analyzed. Coyote springs, Sandia Mountains, New Mexico, the waters of which are bottled and shipped in considerable quantities, show by analysis the following ingredients:

Iron carbonate	13.
Magnesium bicarbonate . . .	13.4
Calcium bicarbonate . . .	48.6
Sodium sulphate	14.
Sodium bicarbonate . . .	6.25
Sodium chloride	58.6
Total in one gallon . .	153.85

The rainfall here is comparatively light, most of the precipitation being in August and September. We never have a day in which the sun does not shine, and during the daytime I have never seen four consecutive hours during which the sun was hid.

The winters in this part of New Mexico are seldom colder than is the weather in the months of October and November in the Middle and Eastern States. The editor of one of our daily journals told me that he had never had a fire in the editorial or composing room of his office during any of the five or six winters that he has been publishing his paper in Albuquerque. The mornings, evenings, and nights are always cool, but seldom, even in winter, is there need of fire from 10 A.M. to 4 P.M.

A striking illustration of the beneficial effect of this climate is to be found in conversing with residents. Many of our busiest and best business men came to Albuquerque as invalids.

We would summarize our observations as to the class of cases that in this climate improve or recover health, and *vice versâ*, as follows:

First. Patients with dulness in any part of the pulmonary tissues, and who are troubled with morning cough and expectoration, but who have no rise of temperature, and have not yet begun to lose weight perceptibly, do well.

Second. Patients with more diffused consolidation, with considerable constitutional disturbance, but not yet presenting cavities, are benefited or recover.

Third. Hemorrhagic cases—that is, patients who from the beginning have had slight hemorrhages, without any fever-reaction or profound constitutional disturbance—do extremely well in these altitudes. Contrary to former teachings, patients seem to be less liable to hemoptysis here than at sea-level. This does not refer to the rupture of large vessels in cavities in advanced disease.

Fourth. Patients in whom the disease is advanced, having cavities and severe febrile symptoms, are better at home; certainly so if they are ill enough to be confined to their rooms. Especially is this true of those who have not abundant pecuniary resources.

Fifth. For patients recovering from attacks of acute pleurisy and pneumonia, and having a tuberculous diathesis, an altitude such as ours is the place *par excellence*. The increased number of respirations invigorates, and the light, dry, ozonized atmosphere enters the collapsed air-cells, and acts beneficially upon the depressed and devitalized system. Patients with advanced throat or laryngeal involvement should seek lower altitudes, the moist atmosphere of Southern California, *e. g.*, being more suitable.

Sixth. Very high altitudes are, of course, known to be unsuitable for rheumatism; but at this altitude of only five thousand feet, cases of both acute and chronic rheumatism are very amenable to treatment, unless the heart-complications are severe, which apparently is not more likely to be the case than in the Mississippi Valley.

Very truly yours, W. G. HOPE.

ALBUQUERQUE, NEW MEXICO.

NEWS ITEMS.

Dr. Adolph Schauenstein, ordinary professor of State Medicine at Gratz, recently died at the age of sixty-four years.

A Medical Faculty at Constantinople.—It is announced that a faculty of medicine is to be founded at Constantinople—the first in Turkey.

Ernst Fleischl von Markow, professor extraordinary of physiology in the High School of Vienna, and for many years the assistant of Brücke, recently died, at the age of forty-five, of the sequelæ of a dissecting-wound acquired in the duties of prosector to the chair of pathological anatomy. In addition to minor papers he was the author of monographs upon normal and pathological histology, general neuro-pathology, physiological optics, the law of contraction, and the relation of the heart-beat to respiration.

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ORIGINAL ARTICLES.

THE BACILLUS COLI COMMUNIS: THE CONDITIONS OF ITS INVASION OF THE HUMAN BODY, AND ITS PATHOGENIC PROPERTIES.[1]

BY WILLIAM H. WELCH, M.D.,
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WE owe especially to Escherich the knowledge that certain species of bacteria are regularly found in the healthy intestinal canal. Of the bacteria present in the normal feces the most abundant is the bacillus coli communis, first described by Escherich in 1885, under the name bacterium coli commune.

This bacillus presents so many points of resemblance to the typhoid bacillus that Rodet and G. Roux contend that the latter is simply a variety or modified form of the colon bacillus. There are, however, so many points of difference between these two bacilli that they must be regarded as distinct species. The typhoid bacillus is actively motile, the colon bacillus only feebly motile; the typhoid bacillus never coagulates milk, the colon bacillus coagulates it in two to seven days; the typhoid bacillus does not cause fermentation of lactose, or if at all, only in very feeble degree, while the colon bacillus actively ferments lactose. There are also differences in the appearances of the growth of the two bacilli on gelatin, agar and potato, but these are less precise and constant than the points mentioned.

Escherich demonstrated that injections of bouillon cultures of the colon bacillus into the circulation of guinea-pigs and rabbits are capable of killing the animals by acute intoxication, if sufficient quantity is injected. Smaller quantities he believed to be devoid of pathogenic power. Dr. Blachstein has published the results of a series of experiments made in my laboratory, showing that injections of one c.c., or even less, of bouillon cultures of the colon bacillus into the ear-veins of rabbits may cause the death of the animals as late as six weeks after the inoculation. These rabbits were much wasted, and presented peculiar changes in the liver and bile. The bile contained the colon bacilli in large number, at a time when they had disappeared from the blood and organs. It was thin and pale, devoid of the normal green color, and presented particles of bile pigment, necrotic epithelium, and masses of bacilli. The liver often contained necrotic foci; the spleen was atrophied.

The first observation of the colon bacillus in the tissues of the human body outside of the intestinal canal was made in 1889 by Tavel, who found this organism in the wound resulting from removal of a tumor of the thyroid gland. Since then there have been several observations of this bacillus associated with peritonitis, angio-cholitis, and some other affections. Observations of this invasion of the colon bacillus have been made by Wyss, Laruelle, Gilbert and Girode, Charrin and Roger, Naunyn, A. Fränkel, and Malvoz. Bönnecken has found the colon bacillus in the fluid of strangulated hernial sacs.

No systematic observations, however, have been published as to the frequency and conditions of invasion of this bacillus into the tissues of the human body. I have for about a year and a half been interested in observations of this character, and take this opportunity to present the most important of the results.

My first observation was in April, 1890. The case was one of acute hemorrhagic pancreatitis, with multiple fat-necroses in the meso-colon and omentum. The bile was nearly colorless, and presented a sediment containing yellow, granular bile pigment, cylindrical epithelium, and zoöglea of bacilli, reminding one of the changes in the bile observed in rabbits dying a long time after intra-venous inoculation with the colon bacilli. There existed a very acute diphtheritic colitis with superficial ulceration. In this case pure cultures of the colon bacillus were obtained from the foci of fat-necrosis, the mesenteric glands, the liver, the bile, the lungs, the spleen, and the kidneys. In this, as in all the cases, roll agar and gelatin cultures were made after thoroughly burning with a hot knife the surface of the organ at the point where the sterilized needle was inserted. The autopsy was made within one hour after death, and in general the autopsies were made in less than twelve hours after death. The colon bacillus, moreover, is not one of the bacilli that invades organs after death in the process of post-mortem decomposition.

As in this case diphtheritic and ulcerative colitis

[1] Abstract of the address of the President of the Medical and Chirurgical Faculty of Maryland, at the semi-annual meeting of this society in Rockville, Md., November 17, 1891.

existed, it seemed probable that it was the lesion of the intestinal mucosa that permitted the invasion of the colon bacillus. From this time we have made bacteriological examinations in the manner described in most of our autopsies.

We have now found the colon bacillus in one or more of the organs of the body in thirty-three autopsies out of about two hundred. (There followed in the address a brief description of these cases. Here only a summary of the principal results is given.)

The suspicion at first entertained has been abundantly confirmed, namely, that lesions of the mucous membrane of the intestine open the way for the invasion of the colon bacillus into the blood and lymphatic vessels, and thence into various organs and parts of the body. The lesion consisted in different cases of hemorrhage, ulceration, perforation, catarrhal and diphtheritic inflammation, strangulation, cancer, traumatic injury, and intestinal suture.

The bacilli were found in the blood, lungs, spleen, kidneys, peritoneum, bile-ducts, gall-bladder, liver, lymphatic glands, testicle, tonsil, brain, and wounds, varying in their distribution and number in different cases. They were found with especial frequency in the lungs and kidneys, but often also in the liver, mesenteric glands, and spleen. The number of colonies in an original tube varied from one or two to a countless number. The diagnosis of colon bacillus was never made without applying all necessary tests, and especially never without demonstrating the power of coagulating milk.

It is not to be inferred that ulceration or other lesion of the intestinal mucous membrane is necessarily associated with the invasion of the colon bacilli in sufficient number to be demonstrable by ordinary culture methods, but only that such invasion is a frequent result of the lesion.

In a number of cases colon bacilli were demonstrated by culture methods in various organs of the body without any noteworthy lesions of the organs containing them or any lesion that could reasonably be referred to their presence. This was true, for instance, in several cases of amebic dysentery. On microscopical examination the bacilli, often in clumps, readily staining with aniline dyes and even with hematoxylin, could be demonstrated inside of small bloodvessels without any alteration in the surrounding tissues. There is, therefore, no evidence that in these cases the bacilli do any harm, although it cannot be positively stated that their presence is innocuous. It is well known that human blood-serum outside of the body exerts a powerful germicidal influence upon the colon bacillus.

This class of cases, therefore, in which this bacillus appears to be a harmless invader, should make one cautious in attributing pathogenic powers to the colon bacillus, even when it is associated with definite lesions, unless it can be shown that other causes can be excluded. In the case of fat-necrosis, for instance, I do not believe that the colon bacillus was the cause of the necrosis, although both cultures and cover-slip preparations showed its presence in large number. I have subsequently made bacteriological examination of three cases of multiple fat-necrosis without finding any microörganisms in the necrotic foci.

I have suspected that the colon bacillus may be the cause of lobular pneumonia, as in several cases this organism has been found in large number and in pure culture in congested, edematous, and inflamed areas in the lungs. It has also been frequently associated with fatty degeneration of the kidneys, but neither in this nor in the pulmonary affection is there any conclusive evidence that the presence of the bacilli has done the harm.

The view that the changes in the bile noted in the case of pancreatitis already cited are referable to the colon bacillus, rests upon experimental evidence. In two cases of angio-cholitis and cholecystitis with gall-stones, the colon bacillus was very abundant, and in pure culture, in the bile. Naunyn has recently called attention to the possible relation between the formation of gall-stones in some cases and the growth of this bacillus in the biliary passages. Gilbert and Girode, as well as Charrin and Roger, refer cases of suppurative inflammation of the bile-ducts and gall-bladder to the penetration into these parts of the colon bacillus.

In cases of peritonitis due to perforation of the intestine the colon bacillus is usually found, but not always, in large number in the exudate, sometimes in pure culture. In three cases of peritonitis due to intestinal ulceration without perforation I found the colon bacillus in large number and in pure culture. The exudate was sero-fibrinous, not distinctly purulent. In these cases it seems warrantable to attribute the peritonitis to the invasion of the colon bacillus into the peritoneal cavity. In a case of ruptured tubal pregnancy the bloody fluid withdrawn by a sterilized hypodermatic syringe from the peritoneal cavity before laparotomy was performed, yielded a pure culture of the colon bacillus. There was found a perforative appendicitis. In the pus of circumscribed abscesses due to perforation of the vermiform appendix I have found the colon bacillus in nearly pure culture. It is a mistake, however, to say, as Malvoz has recently done, that all cases of peritonitis due to intestinal lesion are referable to the colon bacillus. Often enough in this class of cases the staphylococcus pyogenes aureus or the streptococcus pyogenes is present—it may be predominantly so—in the peritoneum. In a case of perforative appendi-

citis recently examined the streptococcus pyogenes seemed to be the only organism present.

In a case of ovarian abscess adherent to an ulcerated cancer of the rectum the colon bacillus was found in pure culture in the abscess.

To the occasional presence of the colon bacillus in laparotomy wounds for the extirpation of diseased Fallopian tubes and ovaries, I have already called attention on another occasion.

It is especially important to know that typhoid ulceration of the intestine opens the way for the invasion of the colon bacillus, which may be found in the mesenteric glands, lungs, liver, kidneys, and elsewhere, mixed with the typhoid bacillus. On account of the resemblance between these two species of bacilli a mistake might easily be made in identifying the colon with the typhoid bacillus, and there is reason to believe that this mistake has been made by some writers. The preservation of all its properties in these cases shows that the colon bacillus is not changed into the typhoid bacillus when it invades the organs in typhoid fever; and this is a further argument against the unwarrantable assumption of Rodet and G. Roux already mentioned.

Only in two cases have I found the colon bacillus in organs outside of the intestine without any demonstrated lesion of the alimentary canal. Although careful search was made, it is not improbable that some lesion was present, so small or of such a character as to escape observation with the naked eye.

A FEW OBSERVATIONS ON THE MYDRIATIC ALKALOIDS.

By ROBERTS BARTHOLOW, M.D.,
of Philadelphia.

The editor of The Medical News has had an intimation from some of his readers that they desire to have some recent information on the subject of the mydriatic alkaloids, and in accordance with his suggestion, I shall seek briefly to satisfy the want.

It may be best to present a tabular statement of the source and names of the principal members of the group:

Mydriatics.

Atropine—Alkaloid of Atropa belladonna.
Salts of atropine:
Atropinæ sulphas;
" hydrochloras;
" hydrobromas;
" salicylas.

Atropine is supposed to be a compound alkaloid and made up of *tropeïn* and *tropic acid.*

Homatropine—A synthetical product formed by the combination of tropeïn with amygdalic acid.

Hyoscyamine—Alkaloid of Hyoscyamus niger.

Hyoscine—Alkaloid of Hyoscyamus niger; and also a synthetic or derivative alkaloid.
Salts of hyoscine:
Hyoscinæ sulphas;
" salicylas; etc.

Duboisine—Alkaloid of Duboisia myoporoides; like the others, one of the Solanaceæ.
Salts of duboisine:
Duboisinæ sulphas;
" hydrochloras.

Solanine—Alkaloid of Solanum tuberosum; the unripe fruit.

Daturine—Alkaloid of Datura stramonium.

According to Ladenburg, daturine, duboisine, and atropine are isomeric and in every way identical with hyoscyamine in chemical constitution and physiological action. If any deviation is found to exist, it is assumed to be due to a modification of the molecular arrangement and not to any fundamental change in the nature of these substances. How far molecular arrangement, and how far substitution, may modify the original powers of the medicament is a question of extraordinary interest. The first experimental work done on this subject was conceived and carried on by Prof. Fraser and Dr. Crum-Brown, of the University of Edinburgh.

They demonstrated that by substituting *ethyl* and *methyl* molecules for some of the existing molecules, the result was that the tetanizer strychnine was converted into methyl-strychnium or ethyl-strychnium, which is a paralyzer like conium or curara in respect of its action on the cord, yet in respect of its chemical relations it reacts to the same tests as strychnine. There occurred, therefore, such a substitution of molecules, that the physiological characters were changed, yet chemically the reactions were not changed.

These remarkable experiences have led to some happy combinations through molecular substitution. We owe to Prof. Ladenburg a series of important investigations, giving new light on the subject of the mydriatic alkaloids. He has shown that atropine—so long before the medical profession as a single alkaloid—is really a compound body, and is made up of *tropeïn* and *tropic acid.* By combining amygdalic acid with tropine a new synthetic product results, and is known as *homatropine.* Now homatropine has actions corresponding to atropine, and is chemically and physically similar, but the effect exerted by it differs much in degree, but not so much in kind, from its progenitor.

Homatropine is preferred to atropine for various ophthalmic purposes, chiefly because its effects on the pupil and the apparatus of accomodation are, while as complete, much shorter in duration. As

a derivative agent, therefore, as a piece of upbuilding of molecules, it has proved satisfactory.

As respects its power and range of utility, *hyoscine* is the most important of the group, and as respects the function of mydriasis it is equal to atropine, homatropine, and duboisine. The qualities that make the range of utility of hyoscine so great are its hypnotic, antispasmodic, and anesthetic powers. Hyoscyamine, its cogener, with its pain-relieving, sleep-producing, and antispasmodic properties, has had much reputation for the relief of certain kinds of nervous diseases. Of the two forms in which it is found in commerce, the amorphous seems to be the more active and curative. Hyoscyamine has visibly declined in reputation since the introduction of hyoscine, owing to the greater certainty and power of the latter. In asylum practice hyoscine has largely supplanted morphine in the treatment of acute mania, the violence of acute melancholia and of general paresis, and as a hypnotic in general. It is remarkable for the absence of after unpleasant results, such as headache, nausea, and constipation, which follow the administration of morphine and other similar agents of the narcotic group. The most experienced therapeutists have agreed on two facts of great importance as to its use, *e. g.*, as to the dose most serviceable in cases of cerebral disease requiring an anodyne; and as to muscular activity—unrest, agitation, etc., as a factor in the therapeutical diagnosis.

It has been shown by various authorities that the minimum dose is, as a rule, far more useful than massive doses, and that intense muscular activity is a condition indicating the use of such a narcotic. The dose of hyoscyamin ranges from $\frac{1}{200}$ to $\frac{1}{10}$ of a grain, and of hyoscine from $\frac{1}{300}$ to $\frac{1}{100}$. Both act favorably when given hypodermatically, and in almost all instances not more than two doses per day will be required. In suitable cases, after the administration of small doses, the sleep is quiet, refreshing, and the system remains free from the after-headache, nausea, hebetude of mind, and constipation that follow in the wake of opium and other narcotics frequently administered. It has been observed that when a dose is administered larger than that merely sufficient to cause sleep, the sleep is apt to be accompanied by jactitations, dreams, and considerable uncontrolled mental agitation. If, however, the amount given is merely adequate to cause sleep, but sleep without disturbance, the result is far happier in the condition of the mind and body.

The action of hyoscine on the muscular system is one of the purposes for which it is now much used, and by those having the largest opportunities for judging, successfully used. My personal experience is decidedly in favor of its administration in cases of *senile trembling*, *paralysis agitans* and *fibrillary agitation* In cases of *chorea*, and of various spasmodic affections of the nervous and respiratory systems, it has a useful place as a remedy.

I should not close this paper without saying something of the remarkable powers of duboisine in mental maladies of a certain kind. I have seen cases of puerperal mania yield to this when all other means had failed. It is far more effective when given by subcutaneous injection than in any other manner. The minimum dose may be given as $\frac{1}{100}$ of a grain, whilst the maximum should not exceed $\frac{1}{60}$ of a grain for adults. Although by Ladenburg considered identical with hyoscyamine, it is clear that it is not identical with it in therapeutical action. Patients experience sensations of a different kind when experiments of control are made or when trial doses are exhibited, and the objective evidences are clearly different. No chemical analysis can dispose of such facts nor can molecular modifications of structure explain the essential differences in physiological and therapeutical actions.

If I were asked to indicate where my preference lay in selecting a mydriatic for maladies mentioned below, my reply would be as follows:

For eye operations and refraction-work, homatropine.

For the treatment of eye-inflammations, atropine.

For maladies attended with insomnia, neuralgia, nervousness, various kinds of nervous trembling, as chorea, senile trembling, paralysis agitans, muscular agitation and unrest, hyoscine or hyoscyamine.

For mental diseases of a depressing kind, melancholia, etc., puerperal mania, with or without albuminuria, duboisine, hyoscine, or hyoscyamine, but especially the first named.

For acute mania, paranoia, mental disorders with much muscular agitation and frequent and protracted muscular restlessness, hyoscine or dubosine.

STRICTURE OF THE URETHRA AND ITS TREATMENT.[1]

BY L. BOLTON BANGS, M.D.,
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IT may not be necessary to give a definition of the pathological condition called stricture of the urethra; but, in order that, in speaking of treatment, I may be clearly understood, and that, in using the word stricture, my meaning may not be misapprehended, I would like to define stricture of the urethra as any unnatural narrowing of the urethra in any part of its whole length. At various times attempts have been made to demonstrate the normal

[1] Read at the meeting of the American Association of Andrology and Syphilology, held in Washington, September, 1891.

urethra as a "closed valvular chink," with certain natural or physiological widenings and narrowings in different parts of it. It seems to me that the canal should be looked upon as a living organ, supplied with muscles and nerves for the two physiological purposes of taking away from the body the urine, and of ejecting the seminal fluid. Anything in the canal, therefore, that will interfere with the proper performance of these duties, or that irritates the nerve-relations, disturbs the harmony of the organ and must be regarded as pathological or unnatural. Whether it be deformity resulting from imperfect pre-natal development or the result of post-natal disease, it occupies the same place in relation to the natural conditions of the organ. It is, then, manifest that to arrive at a clear conception of an obstructed urethra its normal state must be appreciated, and, therefore, each urethra must be studied by itself.

When a large number of urethræ are examined and compared with each other, it will be found that they all present one characteristic, not only in adults but also in infants, namely, that the portion described by anatomists as the bulbous portion is the largest in caliber, or, in other words, capable of the greatest degree of physiological distention. What the precise object of this is I am not prepared to state, but it undoubtedly has some physiological purpose in relation to the function of the urethra. From its position, shape, and muscular contractility it has seemed to me that it serves as a sort of machine for duplicating or reinforcing the action of the bladder and posterior urethra in ejecting the normal fluids. It is evidently not to be regarded as determining the caliber of the spongy portion of the urethra, for it narrows gradually (though in some individuals suddenly) to the commencement of the spongy portion, which is the barrel part, so to speak, and *its* size is the *caliber* of that urethra. Although efforts have been made to describe narrowings of the urethra in its penile portion as natural contractions, and therefore not strictures, because they are frequently found at or near the same point, from a careful study of a great many urethræ I am compelled to conclude that when present these narrowings are actually, practically, strictures in the sense in which the term is defined. In this I am confirmed by the results of treatment. Moreover, these narrowings are not found in every individual, nor in enough persons to form a rule. Over and over again I have examined urethræ that presented no narrowing of the slightest degree after the urethrometer had left the bulbous urethra and the normal physiological distensibility of the penile urethra had been determned. For example, we will suppose that the index of the urethrometer in the bulbous urethra points to the figures forty. At this number the instrument is withdrawn, say from an inch to an inch and a half, gradually being turned downward till the hand on the dial-plate indicates 32 Fr., when it is withdrawn smoothly, easily, and painlessly until it reaches the meatus, where we will say, for example, it is necessary to turn it down to 30, 28, 26, or 24, as the case may be. This urethra, then, I would regard as a normal one, provided, of course, that the posterior urethra was also found to be free from stricture. On the other hand, I have examined large numbers of patients, and have found a narrowing of varying degree in the situation claimed to be normal, say at a point two and a half or three inches from the meatus; having incised this band I have observed the symptoms to disappear, or have been enabled to cure a persistent gleet that, prior to the operation, had resisted all forms of treatment. Was this band normal or abnormal? I regard it as abnormal, and to be classed among strictures of large caliber.

Since the vigorous enunciations of Dr. Otis I think there is no difference of opinion in the minds of most genito-urinary surgeons that there is a class of strictures, chiefly to be found in the penile urethra, known as strictures of large caliber—that is to say, varying in size from 18 Fr. and upward, anything below that being classified as strictures of small caliber; and the latter may, of course, vary from the size named down to filiform, or even impassable strictures. Under some conditions of vigorous contractile quality, or under some condition of urethral irritation, strictures of large caliber may become of small caliber, and hence it is important that they should be recognized; but the majority of them rarely show a tendency to much contraction. When they give rise to symptoms, these are usually indicative of an irritant either to the mucous membrane, producing and maintaining catarrh; or to the nerves, producing various symptoms, direct or indirect.

Of course, many with stricture of large caliber may go to their graves without ever developing any symptom requiring treatment; and conversely, there may be men with symptoms of stricture of large caliber, who may have those symptoms relieved by other means than by operating upon the stricture. But by what factors is the immunity of the latter happy individual to be determined? I know of no other answer than by the good judgment that comes from large experience and careful examination of each case. Not only must the normal size of the urethra and the relative degree of contraction be determined, together with the effect of the latter upon the function of the urethra and bladder, but the pathological status of the mucous membrane must be ascertained by ocular inspection.

How important then that all fixed, arbitrary standards should be discarded, and that each urethra

should be considered and studied by itself. I, therefore, reaffirm my belief in the proportionate relation of the human urethra to the size of the penis in which it is contained, and of the necessity that only by recognizing this principle formulated by Dr. Otis can we determine how to give radical and humane treatment for an infirmity that concerns so many.

The degree to which a stricture will ultimately obstruct the urethra or interfere with its function is determined not merely by the amount of cicatricial contractile deposit caused by the original urethritis, but by the degree in which this deposit acts as an irritant to the urethral tissues. This may be learned, I think, by observation and by the results of treatment. By bearing it in mind we are enabled to make a stronger argument in favor of that means of intervention which, while it aims to relieve or cure the stricture, will irritate the fabric of the urethra in the least degree. For instance, I have seen within the urethra a nodule as large and as abruptly defined as a hazelnut, that had persisted for nearly two years, notwithstanding electrolysis and gradual dilatation, but which was entirely relieved and finally disappeared absolutely after one incision by internal urethrotomy. The deduction seems to me to be plain that the stricture began and the treatment itself kept up a sort of chronic inflammation that maintained and augmented the size of this nodule. After thorough division of the stricture, and maintenance of the separation of its sundered extremities, the functions of the urethra were performed easily, less nutriment was required by the tissues, and the abnormal growth ceased.

The part of the surgeon is not only to divide the strictures, but so far as possible to restore the healthy function of the organs. My convictions in regard to treatment may be briefly stated.

As a witness of the effects of divulsion, in regard to which considerable has of late been written, I cannot but withhold my belief in its advantages. The effect of the operation is an unknown quantity. The operator does not exactly know what he is doing. The effect of the instrument is distributed more or less beyond the strictured areas, and the resulting cicatrix is an irregular and oftentimes violently contracting one. It is non-surgical, non-scientific.

Electrolysis may be dismissed in a few words. When a current is used of sufficient strength to have any effect upon the tissues at all it acts as an irritant, produces inflammatory deposits, and the subsequent condition of that patient is worse than the first. I have had numerous patients coming to me with nodular strictures who had submitted to operations by the disciples of electrolysis and the strictures were exceedingly difficult of treatment.

Gradual dilatation is sufficient for soft, non-fibrous strictures of the posterior urethra and of those of similar pathological structure in the bulbous urethra. It is also sufficient in some of the soft, not well organized strictures in the penile urethra that are practically but simple *adhesions* (?) of the surfaces of the mucous membranes; but for organized strictures I believe that some form of urethrotomy is preferable.

For all strictures of large caliber *requiring interference* I advocate treatment by internal urethrotomy and thorough division, with as little cutting as possible, by means of an instrument that fixes and makes tense the stricture-tissue. The subject of strictures of small caliber demands closer differentiation. For simple, uncomplicated strictures, internal urethrotomy as already described is the remedy. If, however, the stricture be complicated by fistulæ, either in the penile urethra or in the perineum, or if there be indurated cicatricial deposits posterior to four and and a half inches, I would advocate external perineal urethrotomy in conjunction with internal urethrotomy. The former serves more than one purpose. It enables us to divide all stricture-tissue thoroughly and fearlessly, with a definite object in view, and enables us at the same time to abrogate the functions of the diseased urethra by draining away the urine, drop by drop, without any effort on the part of the urethra or perineal muscles. Thus physiological rest to the whole region is obtained as certainly as we obtain physiological rest for a broken limb when we put it on a splint. The process of healing is rendered a continuous and uninterrupted physiological one, without at any time becoming an inflammatory or disease process. Even in cases that have enormous, hypertrophic, indurated masses in the perineum, scrotum, and neighboring tissues—masses that are the result of tight or filiform strictures in the bulbous or membranous urethra—the effect of this drainage will be seen in the softening and gradual disappearance of these hypertrophies, sometimes before the perineal wound has begun to heal.

It seems to me that this principle of external and internal urethrotomy, combined with prolonged perineal drainage, holds good even in cases in which there are evidences of commencing renal degeneration. The result of my experience is that, when I have been obliged to take the responsibility of operating upon patients with tight strictures of the urethra, whose kidneys were in a condition of degenertion, these organs have been immediately relieved of a certain amount of "back-pressure," so to speak. They have resumed their function, as manifested by the diminution of albumin, the disappearance of casts, and by the improved general well-being of the patient. Nor do I think that the life of the patient

has been in the least degree jeopardized by the procedure indicated. On the contrary, patients whose existence would have been placed in peril by the slower process of gradual dilatation, have from the commencement of the perineal drainage shown evidences of rapid recuperation of health. The condition of the patient under these circumstances is certainly rendered perilous by the delay that of necessity is associated with the slower method. The danger is in the condition of the patient antecedent to the operation, or in the conditions that necessitate its performance, not in the operation itself.

ABSCESSES IN POTT'S DISEASE.

BY HERBERT L. BURRELL, M.D.,

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IN this paper I shall limit myself to certain points in the course and treatment of Pott's abscesses that have occurred to me. An abscess, appearing in the course of the treatment of a case of spinal caries, is one of those incidents that may be considered as a conservative act of Nature in ridding itself of the detritus of a destructive process in the bodies of the vertebræ.

The symptoms vary according to the location of the abscess. With all cases there are at first associated a rise in temperature more or less persistent, loss of flesh, and particular individual symptoms according to the anatomical structures involved—for instance, dyspnea or dysphagia in retro-pharyngeal abscesses; respiratory symptoms in cervical abscess; pulmonary symptoms in upper dorsal caries; and in lower dorsal and lumbar abscesses, symptoms are developed according to the viscera pressed upon or involved. For the early recognition of abscesses I have come to depend largely upon a continued loss of appetite, loss of flesh, and continued elevation of temperature; in fact, when a child has been efficiently treated by mechanical support for the spinal caries, and for some reason is not gaining in general health, one may suspect that there is an abscess forming. In the adult, however, these symptoms are not common. Here the course of abscesses connected with spinal caries is quite different. One of the most remarkable things is the quantity of pus that may collect in a psoas abscess in an apparently healthy adult, who has but little intimation that there is spinal caries; perhaps all that has been noticed has been persistent lumbago until the patient is brought to the surgeon, who finds that the iliac fossa is filled with a resistant mass, the thigh slightly flexed and enlarged from the passage downward of the pus along the course of the psoas and iliacus muscles.

I have, in fact, come to regard spinal caries in an adult as essentially a different disease from that which occurs in a child. In adults the following group of symptoms is not at all uncommon: For a few months the patient has noticed some slight, persistent, local pain in the back, which is thought to be rheumatism. He experiences a sensation of general debility; there is slight loss of appetite, but he continues about his occupation—frequently a very laborious one, with progressive loss of flesh and persistent elevation of temperature. On physical examination no deformity in the spine can be determined, and occasionally, especially in the lumbar region, there is only slight spasm of the erector spinæ muscles; but in the iliac fossa, and down on the thigh, one may notice a large collection of pus. It is true that we may have spinal caries in a child appear very insidiously; but in an adult it is the rule, rather than the exception.

Although the appearance of an abscess in Pott's disease may be considered simply an incident of the disease, yet it is a very serious affair unless it is properly treated, and in many of our patients, in spite of all our care, it is the beginning of the end; for when an abscess opens, and sepsis occurs, unless great care is taken a fatal ending is inevitable.

The pertinent question in regard to all abscesses connected with spinal caries is: What shall be done with them? Shall they be left alone, and if so, how long? Shall they be opened, and if so, when? Formerly, as we know, these abscesses were left alone, because the mortality attending their opening was very great, but in later years we have come to regard the opening of abscesses in Pott's disease as a proper procedure under certain circumstances—and these circumstances I shall attempt to define. The surgical axiom, that wherever pus is found it should be evacuated, is not in this instance literally true, since we are all familiar with cases of abscesses in Pott's disease, that, left to themselves, and under careful mechanical and hygienic management, have in course of time become absorbed. It is true that reasoning from an individual case is, as a rule, dangerous, but I wish to relate one case that illustrates the expectant treatment of an abscess.

In 1884, an adult, J. D., twenty-four years of age, a bank-clerk in Somerville, was seen; he had been treated for a year or more for lumbago and rheumatism, but a few weeks previously he had noticed that his right thigh was enlarged and the limb flexed. He called the attention of his family physician to this, and I was asked to see the patient. On examination I found slight tenderness over the last dorsal and first lumbar vertebræ. The concavity of the right iliac fossa was filled with a dense, indistinctly fluctuating tumor. The right thigh, an inch below the groin, was six inches larger than the left, and was occupied by a fluctuating tumor. The

patient had lost some flesh, though his appetite was excellent, but he had been progressively growing worse. His condition having been explained to him, he concluded to try an efficient mechanical support for his back, and to temporize in the treatment of the abscess. A Taylor back-brace was adjusted, and the patient was instructed how to bandage the thigh with a flannel bandage to prevent the extension of the pus.

I saw this patient at various intervals during the next two years, and at the end of that time I could not detect any perceptible enlargement of the right thigh. Four years later there remained some thickening in the right iliac fossa, but the abscess had apparently been completely absorbed. At the present time he is engaged in his occupation, strong, and apparently perfectly well.

This is a case showing what can be done by expectancy. I could cite numerous instances of conditions practically similar in children that were strong and healthy, and not of a marked tuberculous diathesis, in which absorption of the abscess had occurred.

Bearing upon expectancy is the fact that these abscesses are often of long standing—that is, five, six or seven years may have elapsed since the beginning of the carious process; and the more quiescent the carious process, the better the result that may be expected from an operation.

Efficient mechanical support of the spine will in a great many cases unquestionably avoid the necessity for operative interference. My own feeling in regard to the matter is, that, until some failure begins in the patient's general condition, no operation should be thought of just so long as the patient is improving under efficient mechanical support to the spine, unless the abscess is extending in such a way that it is involving important parts—for instance, in the spine, the cord; in the thorax, the lung.

It seems far better to me to temporize until we feel assured that the abscess will not be cared for by absorption; and, again, when we do interfere, I believe in interfering most radically and efficiently; for the danger of interference in psoas abscesses is unquestionably from sepsis, and if we drain efficiently and thoroughly, and keep our wound free from septic contamination, we shall in the vast majority of cases have favorable results.

Aspiration of the abscess is an uncertain measure, for it rarely evacuates the abscess completely, because of plugging of the needle. It should be reserved for those few instances in which temporizing is being carried out, and relief to tension of the abscess is thought necessary.

The treatment by injection of the abscess-cavity after aspiration is uncertain, and when active germicides are used there is danger of systemic poisoning.

The ordinary psoas abscess, as it presents itself, forms a tumor in the iliac fossa and in the upper part of the thigh, and when expectancy has been tried and is of no further avail, I carefully prepare the patient for operation by accurately fitting a Taylor brace, or by recumbency in bed for a week or ten days. This, I have found, tends to limit the size of the abscess and to render it more readily drainable. After aspiration, to exclude the possibility of aneurism or solid tumor, a free incision, just external to the femoral vessels, is made into the substance of the presenting tumor. This is usually associated with the discharge of a large quantity of pus. An incision is then made into the most prominent portion of the swelling in the iliac fossa, care being taken that the peritoneum is avoided when one reaches the transversalis fascia and the subperitoneal fat. From this point a block-tin sound is passed as far as may be up into the abscess-track toward the spine. Direct drainage is then obtained by carefully dissecting down on the outer edge of the quadratus lumborum to the distended psoas and iliacus sheath. Usually these three openings are necessary in order to efficiently deal with the tuberculous material lining the abscess-wall. A curette and flushing are used freely, and large drainage-tubes are placed in such positions that they will efficiently drain the cavity. The incision in the iliac fossa is frequently closed by suture. Occasionally the incision into the anterior upper portion of the thigh is closed by suture, but rarely have I diminished the size of the opening which is made in the loin, from the fact that from this opening I hope to obtain direct drainage of the abscess from as near its source as is practicable. Of course, the fingers are introduced into the opening through the loin, and if any loose fragments of necrotic bone can be felt they are removed.

If the patient has a double psoas abscess I deal with both in the same manner, especially if they occur in an adult; because I have found that with double psoas abscesses it is better to drain both sides efficiently than to attempt to drain one side and then to drain the other; for, if only one side is drained, a large reservoir of pus may be left, which communicates through a small opening with the side drained, and this collection of pus is occasionally the source of systemic poisoning. If a psoas abscess is efficiently drained, the quantity of pus discharged will diminish from day to day, and, according to the size and extent of the spinal carious process, will gradually cease in a varying time.

No more depressing picture can be presented to a surgeon than to see a psoas abscess that he has opened become septic, and the patient gradually develop septicemia and die from that cause. Hence, for success in dealing with these abscesses, the most rigid antisepsis is absolutely essential.

Those unique abscesses, that for some reason do not follow the usual course, of descending in the sheath of the psoas muscle, but point posteriorly at some point on the back, are likewise dealt with by free incisions at their most prominent part, by efficient flushing, and thorough curetting.

Retro-pharyngeal abscesses, which are rare, form a group by themselves. I have seen only six, and two have been fatal. In both instances death occurred from bursting of the abscess and flooding of the lungs. Usually on introducing the finger into the posterior wall of the pharynx one can feel an elastic swelling, which may be incised by a suitably guarded knife introduced into the median line of the posterior wall of the pharynx. The "Roser position" of the head, that is, the head dependent over the end of a table, is by all odds the best, as, with a suitable mouth-gag, it gives complete and efficient control of the mouth of the patient, and the discharge of pus that takes place. With the patient in this position and efficiently held by assistants, one does not have to make a plunge in the dark, so to speak, but can thoroughly open the mouth, and can make a free incision directly into the apex of the tumor, and the discharge of pus will take place through the mouth and nostrils, and there will be no danger of suffocation from the pus entering the respiratory tract.

In the last two cases of retro-pharyngeal abscesses that I have had to deal with I made a direct incision just posterior to the right sterno-cleido-mastoid, dissecting down deliberately until I came in contact with the sheath of the main vessels of the neck. Holding these anteriorly I then entered a director or blunt probe, carefully separating the structures until I tapped the abscess laterally. In this manner I was in one instance enabled to keep the abscess sweet from beginning to end; in the other, unfortunately, the child was moribund at the time of attempting the operative interference, and my efforts were unavailing. This is a measure seemingly worthy of attention, and has been the subject of investigation by one Russian authority.

It is true that the operation for a Pott's abscess is a matter of consequence, but the dressing is of equal importance. I have come to use baked gauze, the inner layers of which are saturated with 1 : 2000 solution of corrosive sublimate, applied directly in contact with the various incisions that have been made. Over this is placed a large quantity of dry baked gauze; and I have found that assistants err in putting on too small a dressing. If it is a psoas abscess it is held in position by an efficient gauze spica-bandage. In all children great care should be taken to protect the dressing by putting on a mackintosh or oil-silk to prevent soiling by urine or feces. Usually, within twelve hours, this dressing must be changed; for from a cavity as large as the average psoas abscess an enormous quantity of sanious fluid drains away and saturates the dressing. When treated by this method the subsequent dressings remain sweet and clean for from a week to ten days at a time.

In abscesses that point in other regions than along the course of the psoas and iliac muscles, for instance on the back, where it is impossible to get directly to the bottom of the channel of pus, the cavity is tamponed with antiseptic gauze. In a retro-pharyngeal abscess when an incision is made directly behind the sterno-mastoid muscle, and the abscess-cavity is drained through this channel, a suitably-sized drainage-tube is placed in the wound, the remainder being held open by antiseptic gauze. This wound should be dressed once in twelve hours, owing to the liability of pus to collect in small pockets, and to prevent any possibility of pressure being made on the important structures of the neck. This measure should be carried out for two or three days.

In the prognosis of psoas abscesses there is an important distinction to be made between abscesses occurring early and late in the disease. In those early or *acute* abscesses that come on within the first few months of a caries of the spine, and that are associated with marked constitutional disturbance, the prognosis is not so favorable as in the late or *chronic* abscesses that occur in the disease, at the end of two, three, or more years, after the beginning of the carious process.

In acute abscesses the patient frequently succumbs to the disease in spite of all our tentative or operative efforts, whereas in chronic abscesses their evacuation by efficient drainage is simply an incident in the course of the disease.

Quite a large proportion of the cases that I have operated on for abscess in Pott's disease have recovered completely, but after a long period of time. There frequently persists for weeks and months, and in certain instances for years, a sinus, out of which is discharged a slight quantity of pus or straw-colored fluid. Frequently the mistake is made of leaving off the antiseptic dressing when the wound is reduced to this sinus, but it should be continued until all discharge has ceased. The drainage-tube should be retained until practically all of the tuberculous material has been discharged, although occasionally I feel that the tube is retained too long.

From my personal experience the following conclusions are warranted:

1. That efficient mechanical support of the spine is the prime factor in the treatment of caries of the spine associated with an abscess.

2. That under an expectant plan of treatment, the abscess will in many cases disappear.

3. That the indication for operative interference

is a steady or rapid decline in the patient's general condition.

4. That the operation should consist in thorough evacuation of the abscess, and the establishment of drainage from as near the seat of the disease as is practicable.

A CASE OF ACUTE GLANDERS OR FARCY.

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B. F. S., twenty-nine years of age, single, white, and by occupation a driver, was admitted to the hospital September 1st. His father died of pleurisy. The mother, one brother, and one sister are alive and well. The patient had always been a healthy man until six days prior to his admission to the hospital, at about which time he noticed that his right shoulder was painful and distinctly reddened. He could not remember having injured the part. He sought medical advice: a diagnosis of erysipelas was given, and iodine applied. The reddening, however, gradually increased and the part grew more painful, until at the time of his admission it had involved the anterior and posterior surfaces of the shoulder and the side of the neck.

The eruption, at this time, was erythematous, without vesicles, not punctate or marginate, but very painful. There was considerable tension about the parts and some fluctuation. The temperature constantly rose higher each morning. The evening temperature ran along the 105° line. The pulse was quick and full; the bowels constipated, with complete anorexia. The heart, liver, lungs, spleen, and kidneys failed to show any signs of organic disease. An exploratory incision into the inflamed area demonstrated the presence of but little pus.

The condition of the man grew steadily worse until, on the 8th of September, a small abscess formed at the angle of the jaw upon the right side. This single abscess was quickly followed by others, until, in the three days before his death, the entire cutaneous surface was covered. Abscesses appeared on the scalp, on the eyelids, in the nose and mouth—in fact, the palmar surfaces of the hands and the plantar surfaces of the feet were the only places exempted. These abscesses appeared first as an erythematous patch, from ¼ to ⅝ of an inch in diameter, quickly becoming indurated and soon breaking down, forming, near the center, a small pustule, which contained a single drop of pus. The pustule, when opened, disclosed at the bottom a grayish, tenacious and adherent slough, which involved more tissue than the size of the pustule would have indicated. On the scalp several pustules were so close together that when they broke down they formed a single ulcer, with this same peculiar slough at the bottom, discharging a thin, irritating, almost colorless fluid. The discharge from the nose was offensive and irritating. The irritation, which, beyond doubt, was due to these abscesses, involved the entire mucous membrane, because the discharge was as copious from the posterior nares as it was from the anterior. He constantly "hawked" and coughed, and complained bitterly of the difficulty in swallowing and the impairment of respiration.

He was at times quite conscious, but he more often displayed a mild and talkative delirium. Occasionally he tried to get out of bed, and it was thought wise to confine him; urine was constantly passed in the bed. A typical typhoid condition developed, with the dry tongue, weak, feeble, and rapid pulse, with a high temperature, which was but little influenced by antipyretics (quinine and phenacetin). He was fed and medicated by the rectum alone during the last two days of his life, owing to the total inability to swallow.

The treatment was simply symptomatic, and consisted mainly in the administration of large amounts of stimulants and quinine in large doses. He died on September 11th.

The post-mortem examination briefly showed the following:

The heart was normal, containing chicken-fat clots, evidencing the slow death. The lungs were the seat of many secondary abscesses, indiscriminately distributed and bearing marked similarity to those upon the external surfaces.

Macroscopically nothing abnormal could be discovered about the liver. The spleen was enlarged and was so friable as to be easily broken by the fingers.

The kidneys were normal.

In fact, the autopsy showed the only signs of secondary infection to be confined to the lungs.

We give the bacteriological examination of this case somewhat in detail. It was the means of verifying the clinical diagnosis, and it also shows the comparative simplicity of experimentally proving the identity of the virulent microörganism concerned.

On September 6th, by means of a sterilized Pravaz syringe, a few drops of serous fluid were obtained from the infra-clavicular region on the right side. A hanging drop examined by means of a Leitz oil-immersion $\frac{1}{12}$, ocular 4, showed moderate numbers of bacilli of about the size of tubercle bacilli. On attempting to stain cover-glass preparations with phenol-fuchsin, Löffler's blue, and gentian-violet, it was found that the bacilli did not take the stains readily, and it was only on leaving specimens in phenol-fuchsin for twenty-four hours, washing with distilled water, without after-treatment with alcohol, that fair coloring was obtained. The microscopical examination again showed bacilli, which appeared to be fully four or five times as long as wide, and in size closely resembling tubercle bacilli.

From the serous fluid, cultures were on September

6th made in beef-extract-peptone-gelatin, on beef-extract-peptone-agar-agar, and in a mixture of the two, which seems to answer admirably for cultures that are to be developed in the incubator.

The result was that in the course of three days, in the gelatin tubes, at the temperature of about 25° C., there was a decided development of small, white colonies in the line of the inoculating-needle, and near the surface, which in the course of twenty-four hours assumed a characteristic, delicate, stellate form.

This growth extended very slowly, and after a month showed a whitish surface of the non-liquefied gelatin, in the center of which, at the point of inoculation, was situated a black irregular mass. The agar-agar colonies, after three days, appeared as very small punctiform masses, growing very slowly, and not giving rise to any color. The gelatin-agar-agar colonies grew similarly to those in gelatin, with stellate arrangement, but without the black mass in the center, as noticed in the gelatin.

Successive cultures from these, both at 25° C. and at 35 C. in the incubator, in similar media, invariably resulted in identical growths. Cultures on boiled potatoes in test-tubes were prepared by inserting a piece of raw potato, cut with an apple-corer, in a sterile test-tube, in the bottom of which had been placed a short piece of glass tubing; together with 10 c.c. of sterilized distilled water, after which the plugged tubes were boiled for half an hour in the steam sterlizer, and on two subsequent days were again sterilized at a temperature of 100° C. for ten minutes. It might be added that, when properly prepared, these tubes may be kept for weeks, or even months, and are always ready for use.

Inoculations of the potatoes were made from the gelatin and agar-agar colonies; the tubes placed in the incubator at 35° C. after twenty-four hours showed the development along the track of the needle of a narrow transparent film, which acquired a yellow, honey-like appearance in the course of the next two days. This colony gradually underwent changes in color from reddish to a dark sepia, and was surrounded by a bluish-black zone, which after a month had become of a dark indigo-blue tint. The surface of the potato surrounding the colony had a distinctly bluish tinge.

Very characteristic growths were obtained by employing sweet potatoes (convolvulus batatas) as the culture-medium. These were prepared in the manner as described for ordinary potatoes.

This culture-medium, it may be stated, has also been found to be a very fertile soil for various species of microörganisms—the bacillus of anthrax, the bacillus megaterium, the bacillus of blue milk, the bacillus figurans, and the various pyogenic cocci, growing rapidly, and developing highly characteristic colonies.

Inoculations from plate-cultures that were placed in the incubator at 35° C., after twenty-four hours showed a prolific growth of honey-like colonies along the track of the needle, which in the course of a few days became dotted with minute greenish-black spots. This coloring rapidly overspread the whole infected area, gradually assuming a darker hue, which after a week resulted in nearly the whole surface of the potato becoming black.

Slides were prepared of nearly all the colonies, and the appearances in all were identical.

After a series of experiments, in which almost all the methods recommended for staining were tried, it was found that most satisfactory results were obtained by staining with Löffler's blue for twenty-four hours, rinsing with very dilute acetic acid (½ to 1 per cent.), washing thoroughly with destilled water, then with alcohol, clearing with xylol and mounting in xylol-balsam.

The bacilli were generally arranged singly, occasionally in pairs at right angles, or in V-shaped figures. In shape they resembled tubercle bacilli, being probably a trifle thicker but no longer than these as ordinarily seen in cover-glass preparations of tuberculous sputum.

On September 7th, some blood freshly obtained from the patient was examined. Microscopically bacilli were found as before, also a few cocci. As a matter of interest it may be mentioned that, although the blood was enclosed in a cell and examined immediately, an abnormally large number of crenated red blood-corpuscles was noted. Staining gave poor results. Plate-cultures made from the same specimen gave two kinds of colonies: some were identical with the colonies obtained from the serous fluid, while the others developed as small, round masses that gradually liquefied the gelatin surrounding them, and that on further investigation proved to be made up of the staphylococcus pyogenes aureus. Inoculation-experiments from the first-named colonies yielded results similar to those narrated.

On September 9th, a small nodular abscess on the neck was opened, and the stringy, whitish, purulent fluid was experimented with. Plate-cultures again yielded two varieties of colonies, which proved similar to those obtained from the blood. No account was taken of the number of colonies of each kind developed, but it is probable that a great many staphylococci were present, as the plates rapidly liquefied. We made no further experiments, as the evidence furnished justified us, in the present state of our knowledge concerning the etiology of acute glanders in man, to pronounce the case an undoubted one of this disease. The diagnosis based on the clinical history and bacteriological experiments was further corroborated by a statement made by a

brother of the patient a few days after the death of the latter that the patient had lately been in charge of sick horses, all of which had died. The fact that no cause for this fatal illness could be assigned is, of course, significant, as it is well known that farcy contracted by man from horses is a most virulent disease.

As the bacteriological investigation furnished no evidence of erysipelas or septicemia, which might have been suspected, these may be definitely excluded.

For permission to make this publication we are indebted to Dr. Adam Trau, in whose service at the German Hospital the case occurred.

The clinical history has been furnished by Dr. Ross, while the bacteriological experiments were carried on in the bacteriological laboratory of the hospital by Dr. Frese and Mr. Ross.

PROGNOSIS IN EPILEPSY.[1]

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THE question that always meets the physician on assuming the treatment of a case of epilepsy is the probability of ultimate recovery. It is, of course, impossible to give a positive decision in any case until we have had the patient under observation for a time; but there are certain factors that will aid us in the matter and at the same time guide us in medical treatment.

The following observations are based on the study of 342 cases that have been under the writer's direct care and 437 cases that had recovered before coming under his observation, or in which the clinical history had been furnished by the parents or friends of the patient.

Single attacks of convulsions, coincident with dentition, acute illness, or injury, have been excluded as possibly not being of a truly epileptic character.

Perhaps the most important point in judging of the probability of ultimate recovery is the age at the time of the onset of the disease. When the first attack of convulsions occurred before the third year of life, in a little more than half the children attacked they ceased before the age of puberty. Selecting 566 cases, the histories of which seem reliable, 52½ per cent. have recovered, having no spasms up to the time the history was recorded. The prognosis grows progressively graver as age advances, and when the spasms persist or begin after puberty recoveries are extremely rare, though even at that age the convulsions occasionally do cease. In my records I find only six such cases. Persistence of the convulsions is usually indicative of structural changes in the brain-substance, and mental instability or decadence will, as a rule, accompany them. When convulsions begin after injury to the head, making their appearance after the immediate effects of the accident have passed away, they are usually of grave significance, indicating that organic changes have followed the traumatism; and, unless these changes can be promptly checked by tonics and hygienic measures, recovery is hopeless.

The relation of heredity to recovery is a perplexing one, from the reluctance of the relatives to acknowledge mental imperfection or nervous disease in their family or from their inability to recognize it. In estimating the following percentages, I have omitted all cases in which the history seemed indefinite, and also those in which there was habitual drunkenness in parents or grandparents, and have included only well-defined cases of mental disorder or organic brain-disease in the ancestry.

In 273 cases in which hereditary influence was established, a little over 42 per cent. persisted, while in nearly 58 per cent. the convulsions had ceased. Of cases in which no neurotic taint was discovered, 38 per cent. recovered and 62 per cent. persisted. This result we might expect, the former class inheriting more sluggish brains, less liable to respond to irritation by convulsive explosions; while the last-named group includes more cases of traumatic origin, those originating in brain-injury received during the initial stage of the eruptive fevers, and more of those beginning during the later years of childhood or the period of rapid development that occurs between twelve and fifteen years of age. These changes are often ushered in by a period of unusual cerebral activity and precocity that is the pride and delight of the parents and too often the doom of the child.

An important point, and one not often mentioned in text-books on epilepsy, is *periodicity* of spasms. By this I mean that they will recur at very regular intervals if the patient is made to adhere to a regular course of living and the natural sequence of the convulsive attacks is not interrupted by remedies. The following cases will illustrate my meaning:

CASE I.—H. D.; spasms occurred with almost unfailing regularity every four days; he finally died of convulsions that lasted several hours, with intervals of two and a half minutes, never varying over five seconds from the expected time until a little while before death, when the intervals lengthened. Post-mortem examination revealed sclerotic changes in the left motor region. (An illustration of this case may be seen on page 45 of Dr. Osler's *Cerebral Palsies of Children.*)

CASE II.—T. D.; spasms recurring with intervals of about fourteen days and at the rate of one a day for two or three days at a time; death from menin-

[1] Read before the Association of Medical Officers of American Institutions for Idiotic and Feeble-minded Persons.

gitis. There was sclerosis of the anterior half of the right hemisphere.

Case III.—M. C.; spasms so frequent as to make it difficult to follow this point, but at such times as they would become less frequent they would seem to follow the rule. Sclerosis of the entire right hemisphere was found at the autopsy.

Case IV.—L. R.; attacks of spasms lasting from two to four days occurred, with intervals of about fifteen days; death was due to meningo-cerebritis. Sclerosis of the right parietal lobe and implicating the occipital was found.

Case V.—T. L. F.; the seizures occurred at very regular intervals. There was general adhesion of the membranes to the cerebral cortex, evidently from a former attack of meningitis.

Case VI.—J. L. B., with structural disease of the brain, finally dying from bulbar paralysis, was another marked example; his spasms usually occurred every fourth day.

Case VII.—E. M.; the attacks took place at intervals of from six to seven days. There was sclerosis of both frontal and occipital lobes of a microcephalic brain.

The following cases illustrative of the periodicity of the epileptic seizures are at present under treatment:

Case VIII.—W. P.; spasms were reported June 15th, 21st, 27th, July 2d, 18th, 24th. (The gap of sixteen days between July 2d and 18th may have been filled in by a night-spasm not seen by the nurse.) Again he has spasms reported for August 1st, 11th, 21st, 31st, and September 10th, when the brain-irritation seemed less intense. In this boy rapid mental decadence and the development of right hemiplegia indicated a serious brain-lesion.

Case IX.—Similar to the foregoing, but less exact in the regularity of his attacks, is the case of T. W., in whom the spasms continued for many months with intervals of about two weeks. In his case mental failure was very rapid.

I have dwelt at considerable length upon the periodicity of the occurrence of the epileptic paroxysm, because it seems an important one in aiding us to decide whether the convulsive attacks in our patients are due to simple over-excitability of the convulsive centers, which manifests itself only when special irritative conditions may exist, or whether they are due to a definite cerebral lesion, which by its constant irritation gives rise to periodic explosions.

The intervals between the convulsive seizures can, of course, be modified by imprudence in diet, excitement of any kind, or by inhibitory remedies, such as the bromides, etc.

If the paroxysm is accompanied by mania, especially if transitory mania seem at times to replace the accustomed spasm, the prognosis is grave.

Such cases should not be confounded with those in which true convulsions appear to be replaced by short periods of excitement, which in rare cases do occur, perhaps to cease in their turn as recovery advances.

In regard to the effect of long-continued epilepsy on the intelligence of the patient, our opinion must be very guarded. A few convulsions in infancy do not appear to be always detrimental to proper mental growth. In exceptional cases they may continue for years without apparent impairment of the intellect. More often the violent disturbance of the circulation and consequent nutrition of the hemispheres, or local hemorrhages, may produce early symptoms of mental incapacity, or these may develop only after a considerable period. It is difficult to understand how the central nervous system can withstand the shock of frequent epileptic paroxysms, for any continued period, without serious impairment of its normal action, and our opinion as to the future mental condition of our patients must either be given with caution or be for a time withheld.

A HINT TO THE LITERARY MEN OF THE PROFESSION.

By CHARLES PERRY FISHER,
Librarian of the College of Physicians of Philadelphia.

I have been induced to write the following from the frequent loss, both of time and patience, that as a librarian I have seen occur to many literary men of the medical profession. I take the liberty to offer a few suggestions—rules, if you will—that would occasion no additional trouble, and, if adopted, would be of great assistance and a saving of labor to all. I refer to the inaccuracy and want of regularity in making and quoting references.

In the first place, if possible, all authors should verify any reference that they wish to quote. As is very well known, a great many writers do not take the trouble to do this. I have frequently had shown to me by the more careful authors, errors in references that they wish to quote, that have been used over and over again by numerous writers, running back for many years; in one case the original was over two hundred years old, and had been quoted perhaps fifty times, and yet it was quite evident that not one had cared to take the time to seek the original. Surely what an author thinks of sufficient value to incorporate in his work should be worth both the time and trouble to verify.

In the second place, I would call attention to the desirability, in making a reference from a book or monograph, of giving the name of the author, with his initials, place of publication, date, volume—if more than one—and page. For instance: "Bell, B., Syst. of Surgery, Edin. 1791, vol. iii, p. 16;" not, as is the custom of many writers, "Bell's Surgery, vol. iii, p. 16." When making a reference

to a journal, the writer should give an accurate copy of the title, place of publication—when not included in the title—date, volume, and page. The custom of using the editor's name in quoting a journal is very objectionable. For example:

"Hays's Journal" for "Amer. Journal of the Med. Sciences."

"Chapman's Journal" for "Phila. Journal of the Med. Sciences."

"Foster's Journal" for "Journal of Physiology, London."

"Magendie's Journal" for "Journal de Physiologie, Berlin."

"Langenbeck's Archiv" for "Archiv f. klin. Chirurgie, Leipzig."

"Sajous's Annual" for "Annual of the Univ. Med. Sciences, Phila."

An editor may have been so long connected with a journal, and be so well known by his writings or otherwise, that his friends may in a complimentary way associate his name with the title of the publication with which he is concerned; but such usage is certainly incorrect and misleading. How many of the younger men of to-day in France, Germany, or even in the United States, meeting with a reference to "Chapman's Journal," would know its title, or even that it was published in Philadelphia? In all the better catalogues a reference is given to the editor's name, of course; but it must be remembered that a large number of readers have not access to such catalogues.

Another form of quoting titles, even worse than the foregoing—for one will not often find a cross-reference of the kind in catalogues—is that of transposing or dropping a word from the title; as—

"Brooklyn Annals" for "Annals of Surgery, Brooklyn."

"N. Y. Record" for "Medical Record, N. Y."

"Zeits. für Chirurgie" for "Deutsche Zeits. f. Chirurgie."

Even the single word "Centralblatt" is sometimes used, the reader being left to discover the journal referred to (there are six or seven "Centralblatts") by the subject of the paper.

The foregoing suggestions with regard to journals are just as applicable to Reports, Proceedings, and Transactions. In fact, whenever a title is quoted, let it be an exact copy of the title-page, abbreviated if necessary.

In conclusion, I would repeat what I have said in the beginning: the adoption of these suggestions will cause little or no additional trouble to writers, and will save much time and labor to many readers. I have no doubt that a great many readers will say there is nothing new in what I have stated, and that authors know how to make references; this may all be true, but I know that the "workers" will agree with me, that, although they may have such knowledge, they too frequently fail to apply it.

ORIGINAL LECTURE.

MELANCHOLIA: ITS DIAGNOSIS AND TREATMENT AT HOME.

A Clinical Lecture
Delivered at the New York Polyclinic.

By W. B. PRITCHARD, M.D.,
LECTURER ON MENTAL AND NERVOUS DISEASES.

Gentlemen: The clinic of to-day illustrates the most common type of mental disease that in general practice you will be called upon to treat. The three patients before you are examples of the condition of mental disease known as melancholia. Each of the three represents a different variety of the affection, and yet, happily, the essential identity of the three cases is quite evident. You will recall the fact that in a recent lecture I gave you a classification of insanities, with a sub-group of melancholias, practically limited to three forms: Simple melancholia; melancholia with stupor, or, in its profound form, melancholia attonita; and finally, melancholia agitata. The disease being established, the condition is one that is ordinarily easily recognized. It must not be forgotten, however, that cases of general paresis and other forms of organic insanity may present an initial stage of symptomatic melancholia. As distinguished from mania, this is a condition of mental depression, or, as Bevan Lewis has expressed it, a mental state characterized by "a rise in subject-consciousness and a loss in object-consciousness." Cerebration and mental life are dominated, to a greater or less degree, by an exaggerated tendency to introspection, and a morbid exaltation of the *ego*. As in other forms of insanity, there may or may not be illusions, hallucinations, or delusions. There are emotional disturbances of the nature of depression, representing mental or psychical pain. There may be, and usually is, impaired will-power, and in all cases there is danger of the development of a morbid propensity to self-destruction. Illusions are relatively rare; hallucinations are less so and are frequently of the auditory variety. These patients "hear voices," for example. Delusions are exceedingly common in the agitated and the stuporous forms of melancholia, and are often found in the simpler cases. I have found visceral delusions especially common. A patient "has lost his stomach," "the liver is rotten," "the blood has dried up," "the body is dead," etc.; or the delusion may be purely psychic: a terrible calamity is about to befall a patient or some one of the household. The delusion may be one of suspicion: the patient's friends wish him out of the way; they are trying to poison him, or to get possession of his property. Or the patient may be utterly depressed, in the depths of abject despair, through some imagined act done in gross violation of the laws of God and man. Punishment is constantly impending in this world, and there is an inevitable hell in the next. Such patients are said to have "the delusion of the unpardonable sin," and such a delusion involves a degree of mental torture that not even hell can rival. It is small wonder that, if uncontrolled, such

patients, as a grateful release, put an end to their lives. Certain of these mental perversions give origin to other symptoms: A delusion of poisoned food will cause a patient to refuse to eat to the point of actual starvation. Fear of an impending calamity will cause loss of sleep, the patient fearing that death will overtake him before he wakes, or that the house will burn down, or the walls fall in. Insomnia, by the way, as has been pointed out by Dr. Landon Carter Gray, is a symptom of great value in these cases, especially in the simpler forms. He has also called attention to another symptom, very common and of much diagnostic importance in such cases, a post-cervical or occipital ache or pain. I have found these two symptoms, insomnia and a post-cervical ache, pain, or other discomfort, in fully 95 per cent. of all cases observed. In the stuporous form of the disease, especially melancholia attonita, the cerebral reflexes are so obtunded that it is difficult to get an intelligent appreciation of a question or even an answer at all. Such patients will often show the presence of this pain by attempts to rest the head, or by repeatedly clasping the hands back of the neck.

To sum up, you have as symptoms of melancholia, a state of more or less profound and unreasonable mental despondency, with emotional disturbance, impaired will-power, morbid propensity (suicidal tendencies), with or without hallucinations and delusions, and with an obstinate insomnia and a post-cervical ache or pain. There are other inconstant physical symptoms in body-wasting, a sallow, dry skin, coated tongue, obstinate constipation, in women amenorrhea, etc., but these are not diagnostic or of value except by association. A peculiar pulse-rate, running up to 110, 120, or 130, is quite common, however, and is worthy of special mention. It is especially noticeable in stuporous melancholia and in that agitated, agonized form in which is found the "delusion of precordial fear."

Let us see how our patients here fit into these symptom picture-frames. The history of the first patient is as follows:

Miss D., aged twenty-four years, native of Ireland and employed as a domestic, was seen by me at her sister's home in September last. I found her crying, and she did not want to see me, insisting that she was not sick and did not need a physician, but a priest, to whom she desired to make confession of something she had done that was terribly wrong. She said she was to be punished by the law for her misdeeds and that I was an agent of the judge, sent to secure evidence to be used against her at her approaching trial. She hoped, but did not believe, that the priest could give her absolution, so grievous had been her offence. She would like to die, she said, but for the fact that she would go straight to hell. There were other delusions, but these are sufficient. I could not establish the presence of hallucinations. The patient's manner was one of intense emotional agitation of a subdued character. She was sad-visaged and anxious, crying quietly most of the time, often walking up and down the room, wringing her hands. From the sister I learned that there was no ancestral insanity and that no known cause existed for her condition. The patient had always been of a retiring, shy disposition. For two or three weeks previously to my visit she had slept badly, had lost her appetite, and her general health had run down. However, nothing was noted as wrong with her mentally except much nervousness, until two or three days before my visit, when she had been found crying in her room at night, unable to sleep, and with the delusions mentioned. At no time had she complained of her head. Under treatment she has improved, until now, ten or twelve weeks later, she is quiet, as you see—rather unnaturally so. Her skin has cleared up, her constipation has been relieved, and she sleeps well, though still dependent on hypnotics. Her delusions have almost entirely disappeared during the past three weeks, and but for the fact that she shows a rather too intense desire to go to church and confession on every possible occasion, she might be pronounced entirely free from delusions. She is, at times, somewhat emotional, cries rather easily, and likes to be alone, showing a condition of mental hyperesthesia, so to speak. Her principal complaint, however, at this time, is of a constant *headache*, located in the *occipital* region. She is not by any means well yet, and even after recovery there will be danger of a relapse if she is not carefully watched. Here you have a history quite typically illustrative of what was, when I first saw it and for some time subsequently, a case of melancholia agitata, but which, as you see it to-day, presents the picture of a simple melancholia, affording an example of that to which I have called your attention before —*i. e.*, a transition in the symptom picture from one type to another. The treatment in this patient's case was carried out at home. The sister was carefully warned of the danger of suicide, and of the necessity for constant watchfulness. The fact that this patient has never made any attempt at self-destruction is no evidence that the warning was not required, but is rather proof of the good results of its observance. The insomnia was the most conspicuous feature demanding immediate attention and to overcome it sulfonal was used in doses of fifteen grains, in milk, at bedtime. It is a very reliable, pure hypnotic, but cannot be used with advantage in certain cases because of its effect upon the circulation, depressing the heart's action. I have twice seen cyanosis and partial heart-failure from its use in moderate doses. You can combine with it, as I did in this instance, sodium or potassium bromide, though the bromides must also be carefully watched lest they add to the depression. For the general condition, I gave opium in the form of an aqueous extract, in tablets of one-fourth grain each, at first three times daily and now twice. The use of this preparation was first suggested by Dr. Gray, as having almost specific properties in melancholia. I sometimes combine with it the extract of cannabis Indica (English), in doses of one-fourth to one-third of a grain. Cannabis Indica seems to prove especially beneficial in the hypochondriacal forms of simple melancholia, with visceral delusions (hypochondriacal melancholia of Savage and others). Extract of malt for the promotion of nutrition, elixir of calisaya as an appetizer, and extract of cascara sagrada as a laxative, constituted the remaining therapeutic measures. This patient will remain under treatment for three or four weeks longer and even then she will have made a comparatively prompt recovery, the duration of such cases being from eight or ten weeks to a year or longer.

This second patient comes to the clinic for the first time to-day. She tells me that she is a widow, that she is

thirty-seven years old, that she was married seventeen years ago, and that she has four children. There is no insanity or other hereditary affection in her family history. She is, as you see, of robust physique and the picture of physical health. She comes to us for relief, she says, from obstinate headache and great nervousness, assuming the form of a constant dread that something terrible is going to happen. Her head began to trouble her five years ago, at which time also her nervous system was badly out of order, as it also is at present. She was at that time nursing a six-weeks-old baby, and attributes her symptoms to a sudden suppression of milk. "Her milk went to her head." At that time she slept badly. All her symptoms, however, improved and gradually disappeared until some four months ago. About that time her husband left home, ostensibly to attend to a business transaction in a neighboring street, and a few days later his body was found in the bay; it was supposed that he committed suicide. The shock brought back all our patient's symptoms in a more aggravated form than ever before. She cannot now sleep more than three—rarely four—hours in the twenty-four, and she has terrifying dreams when she does sleep. She is always sad and almost constantly in tears, crying, as she expresses it, for little or nothing. Her head aches all the time. It is of pain in the *back of her head* and *upper part of the neck* that she complains. She is in constant dread of some terrible calamity, and is also afraid she will take her own life. When asked if she has ever attempted suicide, she answers, with a suggestiveness to which I call your attention, "Not yet." When spoken to about her husband's death, she shows a bitterness which is utterly unreasonable. She "will never forgive him for having taken his own life—he had no right to do it." He left her a good business and a $2000 life-insurance policy, which she had much trouble in collecting, but which she admits that she finally got; but she still insists that he has treated her and his children "with unpardonable injustice." She has no hallucinations that I can discover, and there are no other delusions than those of fear and of her husband's injustice. The case, gentlemen, is one of simple melancholia, with a relapse brought on by the shock of her husband's tragic death. Under treatment the patient should make a good recovery. The duration of treatment in this case may be two months, or it may be six. She will be given the aqueous extract of opium, gr. ¼, t. d. At bedtime she will be given either thirty grains of chloralamid, a most excellent hypnotic, or twenty grains of sulfonal. For the headaches, we shall use galvanism, the positive pole over the nape of the neck, the negative over the forehead. Both electrodes should be of good size. The dose of electricity will be from one and a half to three or four milliampères, for five minutes, three times a week. In some of these cases it affords astonishingly rapid and complete relief. Occasional doses of the bromides may be required, and precautions must be observed to prevent suicide, which, however, will show a tendency to diminish in a direct ratio with recovery of sleep. You will have opportunity to see the further progress of the case at a future clinic.

The third patient, this young man, some of you, perhaps, remember to have seen some three months ago. Those of you who do remember his former appearance before the class at that time are doubtless not a little surprised at his changed appearance to-day. His case is a most interesting one. His history, as written when I first saw him, is as follows: H. M., nineteen years of age, a barber, is the oldest of three children. The second child is a stutterer, the youngest is an epileptic. The father is, and has been for years, grossly alcoholic, and is of a vicious, quarrelsome temperament. The mother is subject to attacks of major hysteria. This patient was a frequent victim of his father's alcoholic wrath and was repeatedly driven violently from home into the streets. He formed bad habits and became addicted to excessive sexual debauches. He worked away from home, and his parents saw little of him for some time previous to his attack. Nothing of value as to the primary onset of his trouble can be determined. The parents first knew of it through a note from the patient, dated in jail, to which he had been committed for attempted suicide, a policeman having fished him out of the river, into which he had jumped from a ferry-boat. He was brought home by his parents, and was under other treatment for two weeks or more before I saw him, having in this time made two attempts at self-destruction, once by swallowing sulphur match-heads, and again by attempting to jump from the window. When brought to me his condition was one of purely automatic existence. His expression was that of fixed despair. He stood in the room until gently pushed into a chair, and refused to answer a question or speak a single word during the entire visit. For several days he had not spoken a word. His eyes would fill with tears occasionally as I talked with his mother about his condition. He acted like one stunned or shocked. His mother stated that he would not eat, that he would not bathe, or dress himself when undressed, and that he passed water only when it overflowed, the patient not showing any conscious knowledge of the act at all. He would lie awake all night, his eyes wide open and fixed upon the wall, at times crying silently. There was most obstinate constipation, the tongue was coated, the skin muddy and dry, the breath foul. Recognizing in his physical condition the basis for the term melancholia—Μέλας, "black," and Χολή, "bile,"—as used by the originators of the word, I put this patient on large doses (twenty drops) of dilute nitro-muriatic acid t. d., adding strychnine gr. $\frac{1}{45}$, to each dose. I gave him twenty grains of sulfonal at night, and put him on the aqueous extract of opium, gr. ¼, four times daily. He was fed mechanically at first, after which he began to eat a little voluntarily. Galvanism to the brain was used and also to the spine—the latter, I confess, somewhat empirically. The patient emerged from a melancholia attonita and, indeed, from a condition very much like katatonia (Kohlbaum, Spitzka—a form of melancholia with stupor, catalepsy, and a tendency to repeat again and again the same words or sentences, known as "verbigeration") into a case of melancholia with stupor and thence to recovery, which is, as you may see for yourselves, perfect. This patient had illusions, hallucinations, and delusions. He would falsely interpret centrally an external object that really existed. His illusions were optical and auditory: a shadow on the wall was "a man after him;" the sound of a pump in the cellar was interpreted as his death-knell;" later on, the sound made by moving his joints, the

"cracking" we all hear at times, especially in "loose-jointed" people, he interpreted as that of a "hinge" or a foreign body in his ankle. He heard voices in a medium of absolute silence, an auditory hallucination, a false *central conception* of something having no real existence externally. His illusions and hallucinations became fixed ideas—*i. e.*, delusions. These were particularly conspicuous of the viscera. His cerebral reflexes were so exceedingly dulled that I could not determine the presence or absence of occipital or post-cervical headaches. Later, as he got better, he complained of them, though not as being severe. This young man in spite of bad heredity—which, by the way, does not in such cases necessarily mean a bad prognosis—has made a most excellent recovery. He is bright and intelligent, and, after the lecture, you will find it of interest to get from him his recollections of his sensations and impressions while in his stuporous state.

Here then, gentlemen, you have three cases illustrating as many types of the same disease, melancholia, the last case being one of melancholia with stupor, or melancholia attonita, a more profound degree of the first. The points of special emphasis are, first, as to diagnosis and particularly as to the diagnostic value and constancy of a post-cervical or occipital ache, and insomnia in association with unreasonable mental depression, as evidence of the simpler forms of the disease or the primary stages of all forms. These three conditions being present, you should be on your guard against suicide, a source of danger in *all* cases not capable of exaggeration. The favorable prognosis under proper treatment to be given in the majority of cases of melancholia is also illustrated in our clinic to-day. A final point for emphasis is with regard to the value of the aqueous extract of opium as a quasi-specific, and as to cerebral galvanism, that not only often quickly relieves the headaches, but very greatly ameliorates the state of mental depression and dependency.

HOSPITAL NOTE.

RESULTS OF THE ANTIPYRETIC TREATMENT OF ENTERIC FEVER BY MEANS OF COLD WATER EXTERNALLY.

By E. C. ELLETT, M.D.,
RESIDENT PHYSICIAN IN ST. AGNES'S HOSPITAL, PHILADELPHIA.

[Service of John K. Mitchell, M.D.]

Since the antipyretic treatment of enteric fever by means of the cold bath was brought into prominence in Philadelphia by Dr. Wilson it has been pretty thoroughly tested in most of the hospitals in the city, and all seem to have agreed as to its many advantages. Dr. Wilson's well-known article (The Medical News, December 6, 1890) shows a large percentage in favor of this plan as pursued at the German Hospital compared with the methods of treatment then in vogue at the other institutions in the city. The method advocated by Dr. Wilson is the Brand treatment, or strict cold bathing. The plan pursued in the treatment of the cases here presented was rather what Dr. Wilson calls the "antipyretic treatment," with the addition of drugs to meet other symptoms. The results are very gratifying as having reduced the mortality in this institution to 18 per cent. less than it was for the portion of the present year from January 1st to August 1st.

The mortality of enteric fever in this hospital since it was opened in April, 1888, has been somewhat above the average. For the year 1889 the death-rate was 10.5 per cent.; for 1890 it was 26.6 per cent. From January 1, 1891, to August 1, 1891, it was 24.7 per cent. By comparing the results in the following cases with the preceding figures a better idea can be gained of what the cold-water treatment has done, than by a comparison with the statistics of other institutions. Hospital statistics regarding the disease under consideration are notoriously misleading, but by such comparison tolerably credible conclusions may be drawn. It should be remembered, however, that the number of patients treated is very small to deduce generalizations from.

The cases here presented were treated during Dr. John K. Mitchell's term of service, in part of which Dr. C. W. Burr was his substitute, and to them I owe thanks for permission to publish this report.

The total number treated was thirty-one, in the months of August, September, and October of this year. Of these we lost two, giving a mortality of 6.5 per cent., which contrasts favorably with the figures above quoted. The disease was of average severity, quite severe in several cases, and well marked in all. Eight of the patients suffered relapses, none of which proved fatal. Two cases of intestinal hemorrhage occurred, but both recovered. One had hemorrhages before admission, and this was one of the patients that died. One case was complicated with acute laryngitis, but this was promptly cured. In no case did bedsores appear, this being probably due to the cleanliness attendant on frequent bathing, the healthy action of the skin thereby promoted, and the rest afforded by the bath to parts ordinarily subjected to pressure. The maximum number of baths given to one patient was sixty-five, the minimum one. The patients were mostly young adults—nineteen males and twelve females. One boy of five and another of eight were among the number. The classical symptoms of the disease were well marked in all, except that constipation presented more frequently than diarrhea. No fixed rule was observed regarding the degree of pyrexia that should indicate the bath, but generally it was given when the thermometer registered 103° F., and for the last month 102.4° F. was usually the signal. The peculiarities of each case were always considered when determining this point, thus treating the person rather than the disease.

The method of applying the bath was as follows: A portable bathtub was filled with water at the temperature at which it came from the faucet, cooled with ice during the hottest days, and warmed as the weather grew cooler, to about 70° F. This tub was rolled into the ward beside the patient's bed, and without exertion on his part he was then lifted into the bath. A cloth wet with cold water was then applied to the head, and the bath continued until the temperature fell to about 100° F. The patient was then lifted on to a blanket and wrapped in it a few minutes, until dry, when he was changed back to bed-dress and sheets. Each bath was followed by a small dose of whiskey.

The average time occupied in thus reducing the tem-

perature was about twenty minutes. Ten minutes often sufficed, while in some instances it had to be prolonged to an hour or more. Especially was this true when the temperature was over 104° F. on going into the bath. The patients, as a rule, took kindly to the bath, and while rebelling at the first one or two, soon found that the subsequent relief was ample recompense for the temporary discomfort. Marked asthenia contra-indicated the bath, and existed in but two cases, both of which recovered. Only once did intestinal hemorrhage coexist with hyperpyrexia, and then the cold pack was substituted for the bath with gratifying results. In several cases, as before mentioned, the bath was resorted to but once, the temperature remaining within reasonable limits after that. It was in these cases that the most striking effects of the treatment were seen, an artificial crisis being induced. The patient put in the tub with high temperature, dry skin, brown dry tongue, flushed face, dull expression and muttering, slept after the bath, to awaken refreshed, with cool, moist skin, clear in expression and intellect, and proceeded on to prompt recovery.

Aside from the bath the treatment was liquid diet, oil of turpentine, gtt. x, t. d., in emulsion, and whiskey, half an ounce every three hours, increasing the latter as often as a compressible pulse and loss of the muscular element of the first heart-sound indicated stimulation. About a third of the cases received no turpentine. Quinine was given to some when defervescence began, and quinine and iron were largely used during convalescence.

The histories of the two cases that died are as follows:

CASE I.—H. W., female, twenty-five years of age, married, was admitted August 30, 1891. The family history and previous personal history were good. The following facts were obtained from her husband: She had not been well since the birth of her last child, three months previously. She complained more of general weakness than of any special symptoms. A week ago she was obliged to take to bed. Since then she has had fever, some vomiting, and diarrhea. She has had two hemorrhages from the bowels. Examination showed the patient to be in stupor, from which she could not be aroused to answer questions, though she could protrude the tongue, and she took medicine and nourishment. Her position was supine, with anxious expression, somewhat restless, face flushed, tongue dry and coated, with sordes on the teeth. The abdomen showed the eruption of enteric fever, gurgling in the right iliac fossa, and tenderness was inferred from the expression when pressure was made in the same region. Temperature 104° F. She was treated by the cold pack and sponging, with free stimulation. She died the third day after admission. No autopsy.

CASE II.—P. M., male, twenty-one years of age, admitted August 31, 1891. His family and previous personal history were negative. He began to feel badly about the middle of August, with weakness, headache, pain in the back and in the bones, etc. He kept at work until August 22d, when he was obliged to take to bed. He had been working on a dredge-boat, and was laid up in a sailors' boarding-house, without any attention until he came to the hospital. On admission he complained of weakness, pains in the body, legs, and head, and diarrhea. The tongue was dry, hard, and coated; sordes were on the teeth. On examining the abdomen the characteristic eruption was found to be present. There was neither tenderness nor gurgling elicited by pressure in the right iliac fossa. The abdomen was somewhat full and tympanitic; the temperature 100°; the area of splenic dulness considerably increased. He was treated by free stimulation with whiskey, and cold baths p. r. n. He became delirious on September 2d, and remained so until he died, September 7th. Before death the temperature rose to 106.8° in the axilla. An autopsy showed extensive ulceration of the lower portion of the ileum. The mucous membrane for two inches from the ileo-cecal valve was destroyed over almost the entire circumference of the intestine, clearly showing the transverse muscular fibers. The cecum showed many ulcers. The mesenteric glands and spleen were much enlarged.

These two cases were, of course, exceedingly unfavorable for any treatment, and are samples of the class of cases that make hospital statistics so misleading as regards the efficacy of any plan of treatment on the mortality of this disease.

CLINICAL MEMORANDA.

UNIQUE CASE OF INTUSSUSCEPTION.

BY MORRIS B. MILLER, M.D.,
RESIDENT PHYSICIAN PENNSYLVANIA HOSPITAL.

THE following case of obstruction of the bowels, due to intussusception of the ileum, in which probably the whole of the invaginated portion of the bowel was discharged a week before death, presents some points of pathological interest and renders the case, on account of the rarity of similar ones, worthy of being placed on record.

The strenuous reparative efforts of nature to overcome intussusception, and its effects after the parts have become so firmly attached as to prevent reduction, were shown in this case to a remarkable degree, and the fact that death did not occur for over a month after the involution took place shows that restoration of the lumen of the bowel and consequent recovery is not impossible in these cases where the integrity of the peritoneal cavity is in any way preserved.

Mrs. E. M., aged thirty-six years, a Russian by birth, was brought to the Pennylvania Hospital, June 1, 1891, in a condition practically of collapse, due, as it soon appeared, to some intestinal obstruction.

The following history was obtained. She was a married woman and had borne several children. the youngest being twenty-two months old; her health had always been good up to five months before admission, when she commenced to have much pain at her menstrual periods, with a scanty flow. Three weeks before her admission to the hospital she began to be constipated—not very severely at first, but during the second week her bowels were only moved once despite frequent and varied doses of purgatives. Three days before admission she commenced to have numerous bowel movements, accompanied with sharp, cutting pains in the left side of the abdomen. These pains continued

throughout the next day, and toward night she developed considerable tenesmus, with small bloody stools. On the day before admission, with the idea that it might give her relief, she took a large quantity of the juice of sauer-kraut, which increased her pain, and shortly afterward her abdomen began to assume the proportions which it had when she came under observation. During this time she had had no vomiting, but when she was brought in she had some retching, with eructations of gas.

On examination she was found to be very pale, with hands and feet cold, and with a blue, pinched, anxious expression. Her tongue was slightly coated; her pulse rapid, 128 per minute, weak, and slightly irregular; temperature 99°; respirations 48. Her decubitus was dorsal with knees drawn up, but this position was not absolute. Examination of the heart and lungs was negative. The abdomen was very much distended in a pyriform shape—with rather more distention on the left side—tympanitic throughout, and exceedingly tender, especially about the umbilicus. Vaginal examination showed the uterus to be very hard and immobile, and the pelvic floor bridged over by a hard exudate, which was especially marked toward the left side. The examination was very painful. Rectal examination revealed nothing.

The treatment was stimulation, with small doses of anodyne for the pain, calomel in small doses, and turpentine stupes locally. The means employed to relieve the obstruction and the tympany were the usual ones of high enemata—soap and water, and oil—and the rectal tube, but all were without avail. Her diet was restricted to peptonized milk given often and in small quantities.

The next day her condition was better, the tympany was not so marked, her pulse was of better character, and generally she seemed improved. However, at this time there commenced a symptom which continued with a greater or less severity throughout her entire illness, viz., diarrhea, which was evidently one of irritation, the stools being numerous—as many as twenty-four in the day—small, very offensive, and of a thin pea-soup character both in color and consistency.

From the 2d to the 5th she seemed to slowly improve; her temperature remained between 99° and 100°, her pulse about 96 and of good volume, her respirations approximated 30 per minute, and pain became a much less prominent symptom. However, the abdominal distention remained and the diarrhea was still pronounced.

On the 6th it was noted that to the left and below the horizontal line of the umbilicus there was a region irregular in shape, extending downward to Poupart's ligament, over which there was more tenderness, more resistance to the hand, and having a rather lower percussion note than the rest of the abdomen.

Stimulation was reduced at this time and the calomel stopped. Efforts were made to check the diarrhea, but it continued despite all treatment, and in fact it seemed that such medication acted unfavorably on her general condition. An exploratory laparotomy was suggested, but the advice of the surgeons called in was that medical treatment could probably be continued further with greater advantage.

On the 12th it was noted that the woman's condition was distinctly worse; she had commenced to have night-sweats, she had wasted considerably, and the involved area had become more apparent and had greater resistance. Stimulation was increased and anodynes became again necessary on account of increased pain, but by the 14th she had once again improved, and it seemed as though recovery was possible.

The evening of the 15th she had much more pain coincident with an elevation of temperature of 102°, and late at night she had a large, loose movement, which contained a stringy, shreddy piece of the small intestine *twenty-seven* inches in length. This piece was an intact cylinder at one end, but much torn at the other. On holding it to the light the muscular striæ together with some of the intestinal glands could be well seen, but the mucous surface was macerated off in the greater part. The peritoneal surface showed slight flakes of lymph, but there were no evidences of peritoneal adhesions having been formed.

The next morning the woman was much weaker and seemed exhausted, but her temperature had dropped to 98.8°. The belly was much more tympanitic than before, and occasional hiccough was present.

On the 17th she passed two more pieces of bowel of the same character—one was two inches in length, the other four—and again on the 18th, a single piece of twenty-one inches, in which distinct Peyerian patches could be seen.

From this time until the 20th, when she was removed from the hospital, against our advice, by her densely ignorant husband, she grew slowly weaker, but in other respects her symptoms were unchanged.

Her death occurred five days after her discharge, and fortunately an autopsy was secured. The notes that follow render the report complete.

Post-mortem, made twenty-four hours after death: Rigor mortis firm. Upon opening the abdomen the omentum was found adherent by comparatively recent lymph to the abdominal wall to the left of the median line and below the horizontal line of the umbilicus. Upon separating this with the finger, a large cavity was opened, which evidently had recently contained pus or feces. This pocket was formed by layers of the omentum and adhesions between the coils of the intestine, and was at least two inches by seven in size. Further examination found the small intestine—evidently the ileum—considerably congested and adherent to the neighboring coils. While endeavoring to discover the position that had been the seat of the invagination, feces began to flow into the abdominal cavity and masked the appearance of the parts so that the exact location could not be determined. The cecum and the appendix were normal, as also were the ileo-cecal valve and the adjacent portion of the ileum. The colon, ascending and descending, was normal. The uterus was bound down by old inflammatory lymph and could be separated only with difficulty. After considerable research the left ovary was found; it was of normal size, but on section contained pus. The Fallopian tubes were so matted down that they could not be examined.

The examination was conducted under great difficulties, on Front Street, near Bainbridge, in a miserable

hovel, without proper light, and with the woman's husband and other relatives watching that nothing was removed.

The microscopical examination of the pieces of the bowel which were passed before death showed conclusively that they were portions of the ileum. These pieces, which have been preserved in the museum of the hospital, measured in the aggregate fifty-four inches.

I am much indebted to Dr. Morris J. Lewis, who was at the time the visiting physician to the hospital, for his kind permission to publish this case.

DEATH FROM PNEUMOTHORAX FOLLOWING ABORTION.

BY ALLEN A. JONES, M.D.,
INSTRUCTOR IN PRACTICE, MEDICAL DEPARTMENT, UNIVERSITY OF BUFFALO.

ON November 7th, a woman was brought to the General Hospital suffering from intense dyspnea, with pallor, slight cyanosis, rapid, feeble pulse, subnormal temperature, and giving evidence in every way of shock. It was hard to obtain a satisfactory history, and only in a vague way we ascertained that a few days previously the patient had had an abortion, followed by chills and fever. It was said that she had been treated for intermittent fever; however that may be, her condition was certainly alarming on her admission to the hospital, and Dr. Stockton at once set about ascertaining the cause of her extreme dyspnea. A physical examination soon confirmed the existence of pneumothorax of the right side. A moderate-sized needle was plunged into the pleural cavity, and by the aid of the Allen pump a steady volume of air was withdrawn. But in spite of our best efforts the patient received no relief, and died a few hours later.

The autopsy, by Dr. Bergtold, showed a large, well-developed woman, about thirty-three years of age, with a heavy layer of adipose. Rigor mortis was present.

The right pleural cavity was full of air, and there was a very foul odor upon opening the right chest. Two openings were found at the anterior edge of the middle lobe of the right lung, at which point rupture of a small abscess, near the surface of the lung, had occurred, rendering patent two small air-tubes, over which a portion of exudate acted as a valve, preventing any return of air from the pleural cavity. The right pleural surface was covered with inflammatory lymph; there was a small quantity of pus in the meshes of lymph about the seat of the rupture. There was collapse of the right lung, with complete atelectasis of the upper lobe. There were no large abscesses. There were evidences of recent acute bronchitis.

In the left lung small hemorrhages were scattered all over its surface, with slight edema of the lower lobe, and a small infarct in the posterior portion of the lower lobe.

There were about four ounces of fluid in the pericardial sac. The heart weighed about eleven ounces. The left ventricle was empty, and the right ventricle contained a recent clot. The aortic and pulmonary valves were competent; the right and left hearts and the aorta were normal.

There was localized pigmentation of the peritoneum. The spleen was large and soft, and, on removal, parts of its surface tore away. The gall-bladder contained about one hundred gall-stones, varying from the size of a pin-head to that of a hickory-nut. The right kidney was pale, the capsule adherent, with scars, the cortex narrow. The evidence seemed to establish an acute nephritis, superimposed upon a chronic nephritis. The left kidney was large, the capsule slightly adherent, its surface pale and injected, the cortex narrow.

The serous surfaces of the ovaries showed injection and pigmentation; the organs were of normal size. The uterus was slightly enlarged, its surface injected. The endometrium was acutely inflamed, and lined by decomposing pus and detritus. In the right uterine vein a large septic thrombus extended from the uterus the whole length of the vein, and entered the ascending vena cava for about an inch. The stomach, intestines, and pancreas seemed normal.

This case is especially interesting as one of those rare instances of sudden death from an affection of an organ most remote from the seat of primary disease. There can be no doubt that a fragment of the septic thrombus found in the uterine vein and vena cava was carried to the right heart and thence to the lung, where it set up localized suppuration, which, in turn, resulted in the destruction of the termini of the two small bronchi found patulous, so that the air was thus suddenly thrown into the pleural cavity.

Perhaps more might have been accomplished by freely opening the pleural cavity, as in Estlander's operation, but I doubt the probability of any measure saving this patient's life, when we consider the profound septicemia from which she evidently suffered.

This case preaches an eloquent sermon to those at all inclined to be negligent in the proper after-treatment of abortion.

CHLOROFORM-POISONING.

BY W. A. DEWOLF SMITH, M.D.,
SURGEON TO THE BRITISH COLUMBIA PENITENTIARY; VICE-PRESIDENT B. C. MEDICAL COUNCIL, NEW WESTMINSTER, B. C.

ON the night of the 4th of March, 1891, I was by telephone requested to see a woman at the police-station, the officer on duty informing me that the woman had poisoned herself. When I arrived at the station I found the woman in a semi-conscious condition, sitting on a bench, being supported in that position by the officer who had brought her in. I was informed that she was supposed to have taken a dose of chloroform, with suicidal intent. I at once caused her head to be lowered, and loosened her corsets and other garments. She was at this time quite unconscious, the breathing slow but shallow, the pulse rapid and weak. The conjunctivæ were insensitive. Having no stomach-pump at hand, I injected hypodermatically one-third grain of pilocarpine, which in a few minutes produced emesis. There was a very strong odor of chloroform in the vomit. After the emetic had acted the pulse slowly began to improve, and as she could not swallow I at intervals injected hypodermatically six or eight drams of brandy. She was now laid on a bed, and as she apparently felt chilly, was well wrapped up in blankets and let alone. In about two hours she began to recover consciousness, and was soon able to tell that she had had an ounce-bottle of chloroform, and desiring

to end her life had taken some of it, she did not know how much. She had been able to walk about the streets for an hour, when she was found by the officer, leaning against a building, her knees hardly able to support her. With his assistance, however, she walked to the station, and there fell into the unconscious state.

Judging by reports in the medical journals that I have at my command, poisoning by chloroform is comparatively rare, and death from it seems rarer still. In some cases respiration has had to be kept up, or stimulated, by electricity or other means, but in this case the breathing, although shallow for a time, never showed any tendency to stop.

A remarkable point in this case is the length of time the woman was able to walk about after the chloroform was taken. In another case[1] it is recorded: "T. D., aged sixty, took about half an ounce of chloroform, mistaking it for spiritus chloroformi. I was called about ten minutes after, and found him nearly insensible; five or six minutes later he was perfectiy unconscious." In another case,[2] a man is said to have walked 250 yards, and was soon after found unconscious in his bedroom, after having swallowed two ounces of the drug. In this case the quantity swallowed did not exceed one ounce, but the distance walked by the woman was nearly a mile, besides which she went over part of the distance two or three times. It is difficult to determine the fatal dose of chloroform, for one dram is said to have caused death in a child,[3] and Dr. Saunders[4] mentions a case in a man that was fatal in thirty-six hours after one ounce, and one which was fatal in forty-eight hours after six ounces

ARTIFICIAL EYES INSERTED WITHIN A WEEK AFTER ENUCLEATION.

By GEORGE M. GOULD, M.D.,
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It is commonly advised that artificial eyes should not be prescribed until three or more months after enucleation have passed. This period is a sore one for most patients, the appearance of the empty socket or the "black blinder" being equally unpleasant both to the patient and to his friends. Relying on the well-known tolerance of the orbit for foreign bodies, I have in three instances advised the insertion of the shell within a week—once on the fifth day and twice on the sixth. In another case it was put in on the tenth day. All wore the artificial eyes from the first, not only with no inconvenience or bad results, but with entire satisfaction and comfort.

MEDICAL PROGRESS.

Pancreatic Diabetes.—Dominicis (*Münchener medicin. Wochenschr.*, October 13 and 20, 1891) has conducted a series of experimental investigations, the results of which lead him to conclude that, as a result of destructive disease of the pancreas, there develops a grave form of diabetes, of which the characteristic feature is not glycosuria, but a progressively fatal marasmus. This form of diabetes is considered a constitutional derangement of nutrition, attended with increased tissue-metamorphosis, and dependent upon the removal of influences inherent in the pancreatic secretion.

Conjoined Administration of Potassic Iodide and Insufflation of Calomel.—Kanasugi (*Berlin. klin. Wochen.*, September 7, 1891) has reported a case of syphilitic laryngitis in which the conjoined internal administration of potassic iodide and insufflation of calomel were followed by acute laryngitis, with edema, dyspnea, hoarseness, and pain. It has been known that calomel, dusted on the conjunctiva in course of the administration of potassic iodide, occasions conjunctivitis. It is conceived that the action is dependent upon the local formation of an iodide of mercury.

The Sequelæ of Influenza.—In the course of a series of lectures at Gresham College, Thompson (*British Medical Journal*, October 24, 1891) called attention to the pulmonary and nervous sequelæ of influenza. The asthenic, suppurative pneumonia and pleurisy—types that ordinarily appeared only in broken-down constitutions—afforded strong evidence of the depressing influence of the disease. It was maintained that there was a sharp contrast between the nervous sequelæ of influenza and those of diphtheria. In diphtheria the paralysis was motor; in influenza it was essentially sensory. The gastric complications that, with the pulmonary, were so fatal in the latter part of the epidemic, were referred to the nervous system, as were also the cardiac complications. The especial frequency of symptoms referable to the lungs, stomach, and heart suggested the action of a toxic agent upon the pneumogastric nerve.

A Case of Extensive Syphilitic Endarteritis.—Kauders (*Wiener klin. Wochenschr.*, No. 42, 1891) has reported the case of a man, thirty-five years old, with a specific history of six years' standing, who presented symptoms of mental confusion, vertigo, and failing memory; especially was the memory of recent events impaired. The right upper and the left lower extremity were enfeebled and slightly wasted. For six months there had been no radial pulse at the right wrist, the vessel being replaced by a firm cord. Speech was slow, hesitant, and slightly ataxic. The tendon-reflexes were exaggerated; sensibility was unimpaired. Seven weeks after first coming under observation, the man suddenly lost consciousness, with the restoration of which it was observed that right hemiplegia and aphasia existed. At this time it was noticed that the terminal phalanx of the great toe of the left foot was mortifying. Sixteen weeks subsequently the man died, the urine having been diminished, together with the presence of a considerable quantity of albumin and of granular and blood casts. At the autopsy an area of softening was found in the left temporal lobe, while the artery of the fossa of Sylvius was occupied by a loose, yellowish-brown thrombus. The wall of the vessel was thickened and vitreous, but the lumen of the vessel was not narrowed. The remaining vessels of the base and convexity were normal. The basal ganglia of the left hemisphere were softened. The heart was small and atrophic; its valves were normal. The intima of the ascending aorta was greatly thickened,

[1] H. J. Saunders: Canada Lancet, February, 1874, p. 209.
[2] J. G. U. West: Lancet, 1886, vol. ii, p. 13.
[3] Guy and Ferrier.
[4] Loc. cit.

uneven, not fatty, calcareous, or ulcerated. The orifices of the coronary valves were narrowed. The upper half of the spleen was broken down into a cavity containing fluid and necrotic tissue; the lumen of the arterial branch passing to this portion of the organ was closed by enormous thickening of the intima of the vessel. The intima of the splenic artery and of its other branches was thickened, but in slighter degree. The right kidney was one-fifth of its normal size; its surface was irregular and nodular, and marked by atrophic cicatrices; the renal artery and its branches were greatly thickened and their lumen narrowed. The left kidney was of normal size, but deformed by cicatricial contraction. The right femoral vein was occluded by a yellow, softened thrombus, which extended into the inferior cava. The left femoral artery and the brachial, with their branches, were diminished in capacity by thickening of their intima; as were also the right femoral and the left brachial, though in minor degree.

Diplakusis.—Before the Berlin Society for Internal Medicine, TREITEL (*Berliner klinische Wochenschr.*, October 19, 1891,) described as diplakusis a condition in which sounds are heard differently with both ears. Two forms are recognized: diplakusis binauralis and diplakusis echotica. In the former, music, or tones, or voices are heard more distinctly with one ear than with the healthy ear, or apparently louder than they really are. The condition is commonly associated with disease of the ear. In diplakusis echotica, however, speech also is heard double. The difference between the true sound and the false sound is not always alike. It may vary in the same person, even in the course of a day. The derangement is not organic, but functional. In one of two cases the condition developed from use of the telephone; in the other, after rupture of the tympanic membrane. It is thought to be dependent upon fatigue consequent upon abnormal stimulation of the auditory muscular apparatus.

Meriatchenje is the name applied by TOKARSKI to a condition observed in Siberia, in which individuals without other abnormality involuntarily perform senseless, sometimes criminal acts, spontaneously or in obedience to commands from others, or repeat words or actions that they hear or see. In one case, the condition had existed for thirty years in a woman seventy years old, following a fall from a horse, with loss of consciousness. In a second case, in a woman thirty years old, the condition had existed for two years, since the death of her husband. In four other cases there was an irresistible tendency to imitation, induced by anger or fright. The disease affects principally the natives of eastern Siberia, but Russian immigrants do not escape. It has occasionally been observed to be epidemic. The maladies described by voyagers to Java, Singapore, and North America as lata, sapitlakar, and the jumping disease, appear to be identical with meriatchenje, the identity of which with tic convulsif, however, is disputed.—*Revue de l'Hypnotism* (*La Méd. Mod.*, No. 35, 1891).

Successful Laparotomy for Traumatic Rupture of the Small Intestine.—At a meeting of the Royal Society of Physicians of Vienna, JAHODA (*Wiener medizin. Presse*, No, 43, 1891) reported two cases of traumatic rupture of the small intestine successfully treated by laparotomy. In both a blow upon the abdomen was followed by symptoms of internal incarceration. In one case laparotomy was performed eighty hours, in the other twenty-five hours after the accident. In both, a brownish fluid was found in the abdominal cavity; the small intestines were agglutinated by fibrino-purulent adhesions; and in a loop of bowel, at the free surface opposite the attachment of the mesentery, there was a perforation. Lembert sutures were introduced, the deposits gently removed, the abdominal cavity irrigated with a one-tenth per cent. solution of salicylic acid, graduated suture of the abdominal walls performed, and drainage provided for. In one case, union took place by first intention; in the other the lower portion of the wound failed to unite primarily.

Dermoid Cyst of the Bladder.—REHM (*Wiener medizin. Presse*, No. 43, 1891) has reported the case of a man who presented the symptoms of imperfect evacuation of the contents of the bladder. The urine was normal; the left lobe of the prostate was apparently enlarged. The patient was instructed in the employment of the catheter and was sent home. A few weeks subsequently he again presented himself with the symptoms of a putrid cystitis. Examination disclosed the existence of a false passage in the membranous urethra, and thrombosis of the left femoral vein. The enlarged lobe of the prostate was sensitive. Irrigation of the bladder and drainage by perineal section failed to relieve the man's condition, so that as a last resort the bladder was entered from above the pubes. The mucous membrane was lined by phosphatic deposits. Posteriorly to the entrance of the left ureter there was a flat tumor, of the form of a cock's comb, that bled readily. Close behind the tumor there was a diverticulum occupied by a cyst that contained decomposing atheromatous matter and hairs. The cyst was removed and the man ultimately recovered.

A Sign of Pleural Effusion.—At a recent meeting of the Medical Society of Lyons, COIRAT (*Wiener medizin. Presse*, No. 41, 1891, p. 1557) reported a case of hydrothorax in a child, of which the only evidence was an absence of the breath-sounds. By compression of the base of the thorax, egophony was elicited, disappearing with the removal of the pressure. In cases of slight pleural effusion in children, except when the fluid is encapsulated, the level at which egophony is heard may be altered by moderate compression of the chest.

Celluloid Plates in the Closure of Trephine Openings.—At a recent meeting of the Royal Society of Physicians of Vienna, FILLENBAUM (*Wiener medizin. Presse*, No. 43, 1891) presented a soldier in whom a celluloid plate was used to close the opening made in trephining on account of a complicated fracture of the skull. The wound healed without suppuration. The case was the fifth of its kind thus treated.

BILLROTH added that he had at his clinic satisfactorily treated a considerable number of cases in the manner indicated. The hopes from this method in cases of traumatic epilepsy were, however, not realized.

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A GREAT MEDICAL DISCOVERY IGNORED.

THERE are few medical truths that have been discovered fraught with more possible and incalculable good to humanity than one that is ignored by the great body of the medical profession.

There are explanations and sufficient reasons for this anomalous fact. Among them may be noted these:

1. The discovery has come about slowly and silently. It has been made by no one man and has come with no flourish of international congressional trumpeters. So softly and slowly has it crept into scientific medicine that its own advocates are but half aware of it, and do not yet realize its almost unparalleled value.

2. It is a therapeutic measure that depends for its exercise upon an exactness of knowledge of delicate mysterious physiological and psychological functions that few possess, and upon a subtle discrimination and judgment with which, by character or education, few are endowed.

3. It has the misfortune to depend for its promulgation and practical application upon the specialist, and almost upon the specialist of a specialty—and this in a profession and in an epoch in which it is fashionable to sneer at specialism, and at the specialist who dares plead for the truth he knows—and that, at first at least, only he can know.

4. The tradition and habit and ambition of the ophthalmic specialist is to treat diseases—inflammations—or to perform operations upon the eye. The truth is that refraction-work has come into tremendous importance, and must make up nine-tenths of the routine practice of the future ophthalmologist.

Is it an exaggeration to say that the chief complaints of fully one-half of the patients that apply to the family physician, are of headache and digestional affections? Is it another exaggeration to say that fully one-half fail to get permanent relief?

Is it again an exaggeration to say that from these causes a large proportion of women have hopelessly resigned themselves to a lifetime of wretchedness?

The oculist daily has patients who have spent (to them) fortunes paying physicians and druggists; who have taken everything and done everything for ten, twenty, or thirty years, to get relief from wretchedness beyond description. No physician ever said "eyes" to them. Yet a pair of glasses relieving the compound hyperopic, perhaps unsymmetrical, astigmatism and anisometropia, give relief as if by magic.

If these things are true to anything like the extent contended for, the general standard of health is being distinctly lowered and the average vitality of the race lessened by a cause that so generally and so profoundly affects its mothers for evil. Headache—deranged function of the organ that controls vital function—and digestional abnormality—nutrition being the very source of vital power—have an evil significance impossible of over-valuation.

For twenty years the ophthalmologists have been tirelessly preaching that eye-strain due to refraction errors is the chief causational factor in the production of headache. This is a truth, and yet the truth is ignored the world over. In Europe it is hardly suspected, commonly scouted, and, so far as therapeutic application is concerned, hardly dreamed of. It is only in the United States, and even here only in one or two cities, that the truth has a comparatively adequate application. To the great majority of those of the country who are suffering from ametropically-caused disease, no word has come as to the origin of their trouble.

But this, as regards headache alone, is only half of the truth. Wherever there is headache there is nutritional disturbance. In rare cases there may be a digestional reflex neurosis without headache

and due to ocular irritation. Usually the headache precedes or accompanies. Hence it is that the full power of eye-strain to work disaster will never be realized until there is a general recognition on the part of the profession that anorexia, dyspepsia, and constipation are very, very frequently due directly to eye-strain. It is perfectly useless to sneer at hobby-riding. The sneer will not alter the fact or relieve the patient. It were better and more scientific to test the theory with a mind free of prejudice. One little proof is ready to hand: let the sneerer put on a pair of spectacles such as every oculist applies every day to correct ametropia. At most it will take but a few hours for the artificial ametropia thus produced to bring on headache, and not only anorexia, but probably vomiting. There is one other test, easily applied: paralyze the accommodation for a week or two in a young patient suffering from *possible* reflex ocular neuroses. The frequent relief will be a striking lesson in differential diagnostication.

Sick-headache, from which thousands in every community are sufferers, is usually if not always due to eye-strain, and, unless of life-long duration, is quickly curable by a pair of proper spectacles.

Anemia is, perhaps, most frequently due to the ocular irritation of uncorrected ametropia, followed by nutritional disturbance. Many cases of hysteria have the same etiology.

But possibly the worst result of eye-strain is the generally impaired nutrition, the "nervousness," the neurasthenia, the reduced vitality that so far lessens resisting power as to make the system incapable of withstanding infectious disease or exceptional strain of any type. Eye-strain is a common and great soil-exhauster for the in-rooting of a prolific crop of the weeds of general disease.

The "nervous" origin of disease is a fact becoming more recognized every day. If diabetes and albuminuria, as contended, may be of nervous origin, then diabetes, etc., may possibly be due to ametropia. Functional heart trouble, temporary anesthesia, and paralyses, localized pain, etc., may be caused by a deranged reflex from a morbid peripheral stimulus, such as that of the eye. Functional disease is the forerunner almost always of organic disease—the two are stages or phases of the same fact. Desire and physiological habit produce organs. Unhygienic habit and abnormal function wreck organs.

"But we cure headache, sick-headache, giddiness, anemia, and abnormalism of digestion by drugs alone, and every day." Willingly granted! because these affections are often, and perhaps generally, due to other than ocular causes. And more than this, powerful tonics may sometimes relieve, even when the neurosis is of ocular origin. It is an undeniable fact that some cures may be effected without touching the final and veritable causes of the disease. In stopping the one result of a reflex ocular neurosis by powerful drug-action, the reflex may be shunted elsewhere, or more probably the evil effect of forcing ametropic eyes to continue their work without correcting lenses will be to produce the local ocular evils of blunted retinal sensibility (amblyopia), ametropic choroido-retinitis, imbalance of the muscles (heterophoria), conjunctivitis, cataract, etc.

The cause of so much eye-trouble in modern life? A perfectly evident one: The eye in the animal world and in the human organism up to the present century was developed in response to definite need, that of the clearest possible distant vision. Civilization, demanding close and continued near vision, with its printing and writing and schools and commercialism, its indoor and urban life—all this is a thing of the past few dozen years. An organ produced by millions of years of reaction and habit cannot, without harm and injury, be forced in a hundred to a different usage. The tremendous importance of the eye to the organism makes Nature, with her subtle, wonderful wisdom, turn the irritational eye-strain reflex to brain or nutritive system—anywhere but to the all-important eye!—and hence it is that the eye does not feel pain, but other organs do. Inhibited reflexes produce general hyperesthesia, vertigo, and headache; switched reflexes produce neuralgia, anorexia, car-sickness, etc.

There is one other manner in which civilization may act upon the eye: the intense labor to which it puts the eye brings ocular irritation and congestion, with varying tension, that undoubtedly produce or help to produce corneal asymmetry or astigmatism, the great agent of eye-strain. The necessity for accurate vision, the slavish continuance of long ocular labor, spurs the over-sensitive ciliary muscle and nerve-centers to extraordinary exertion and, each aiding other, the vicious cycle is complete. The hyperesthetic sensibilities, the headaches, night-terrors, and anorexia of pale, early-forced, book-fed school children, are the inevitable product of far-sighted astigmatism and short-sighted ambition. The brain is forced to unwonted tasks with imperfect ocular means. A discriminating

physiologist sees that the eye is an organ fearfully overworked, bound up most intimately with every mental and physical act, most indescribably delicate in adjustment and function, and responding to a stimulus millions and millions of times more swift and more infinitesimally small than that of any other sense-mechanism of the body.

Psychologically, character and calling in life have doubtless often been changed and determined by ocular irritation. It is a truism that the disposition is entirely changed by it. The mind is almost the sole product of the function of vision, all thinking being in pictures, the very letters of the alphabet being conventionalized pictures. American morbid restlessness and hyperesthesia may to some extent be due to ocular irritation.

The practical lesson of it all is (so subtle are these beginnings and causes of evil) that every child, well or not well, should have its eyes examined to see if possible or unsuspected abnormity of the refraction exists. Especially is the possibility of an ocular origin to be suspected in all cases of mal-assimilation not clearly traceable to other causes, in all cases of headache, neuralgia, chorea, nightmare, insomnia, etc.

With this proviso and condition: That the ophthalmologist have been thoroughly trained in the very modern science and art of refraction, that a mydriatic be used, and that the refractive error be patiently and accurately worked out, not with the ophthalmoscope, but with the test-lenses, and worked out to a quarter or even to an eighth of a diopter, and that a painstaking optician fit and adjust accurately-made lenses. It is also necessary that spectacles be readjusted monthly so that they shall be kept with mathematical precision in their proper position before the eye.

CAUTION AS TO TURKISH BATHS.

A few weeks ago a young man died in convulsions in the hot-room of a Turkish bathing establishment in New York city, and last week another sudden death occurred just as the bather came from the plunge-bath. It therefore becomes a pertinent question if this form of bath may be attended with dangers, and should be surrounded with safeguards. It may be that in these cases the deaths were only indirectly or not at all due to the baths, but it cannot be denied that there is usually too injudicious and indiscriminate use of these baths on the part of the public and too much carelessness on the part of the attendants. As the business is commonly carried on, any person, well or ill, may take a bath, and may stay in the hot-rooms as long as he pleases. Very often the attendants are entirely oblivious of the bather's condition, or as to the length of his stay in the superheated apartment, because they have quite enough to do to care for each bather as he presents himself. Each bather is supposed to govern his actions according to his own private judgment. There can be little doubt that in certain forms of cardiac, arterial, and cerebral disease the bather should act only upon the advice of his physician, and there can also be little doubt that every bathing establishment should see that supervision and guidance are exercised over the bathers. The pulse-rate is immensely quickened in the hot air, and a too protracted stay has probably in many cases proved injurious.

The Turkish and Russian baths are largely supported by those prone to an excess of adipose tissue, in the belief that the bath serves to check or to lessen fleshiness. But without rigid attention to other factors, and without intelligent medical advice, the bath will have no such influence. The jockies that stay in the bath continuously for days, thereby reducing their weight five or six pounds a day, are quite as careful as regards diet, and they very speedily regain their former weight when "the races" have been run.

These baths are excellent therapeutic and hygienic agents, but their use or avoidance should be guided by professional advice, and with more discrimination than is usual; whilst on the part of attendants there should be a more watchful and intelligent supervision and guidance exercised over the bathers.

CARPETS AND INFECTION.

In the wonderful progress in the science and practice of hygiene that has come about during the last ten years, it seems strange that so little attention has been directed to carpets—an evil of which the effects can only be serious and extensive.

Not many years ago it was the pride of hospital-managers to adorn their wards with pictures, curtains, carpets, and every device of ornament now condemned; but the teachings of bacteriology so speedily made it clear how and to what extent danger lurks in beauty of this kind, that hospital-ornamentation is now a thing of the past. What is true of hospitals is certainly true, though to less extent, of the home. We know that every nook

and corner not readily reached in the daily or frequent dustings is a nidus for the lodgment, growth, and development of disease-germs, and perfect sanitation would require the reduction of these *ad minimum*.

Of all such depositories, none can be more productive of harm than carpets. Here is an excellent bed for the breeding of germs, and in the case of fluids, as, *e. g.*, expectoration, for their subsequent drying and dissemination as dust. The very warmth that commends the use of carpets is a potent factor in the preservation and multiplication of the bacterium.

This is but one aspect of the question, though a serious one. Carpets are answerable for yet other evils. Originally devised, no doubt, as much for warmth as for ornamentation, they have come to take the place of that solidity of structure that alone can secure healthful warmth. The flimsy, poorly-joined floors and doors of modern dwelling-houses make carpets a necessity for barest comfort, and have been made endurable only because of these defects. This is the serious aspect of the question in point of remedy. An uncarpeted floor means draughts, cold, and every circumstance of discomfort; and until houses are better built, no matter what elaboration of painting, staining, or polishing is bestowed upon the floors, their imperfections of structure would still make rugs or carpets a necessity.

We are not aware of any statistics to prove the unhealthfulness of carpeting, nor is it plain in what way reliable data could be obtained; yet we are none the less convinced that carpets exert an evil influence, especially in the propagation of our dreadest scourge, tuberculosis. That the sputum of phthisical persons may be dried, preserved, and disseminated in the dust of the room is a proposition that in the present state of our knowledge needs only to be stated to be believed. How often this has happened—indeed, is happening every day—and how often such infections pass for cases of family tendency and the like can only be surmised, but there can be little doubt that theory and fact are in close accord.

What can be done to remove this evil? Little, we confess; nothing without scientific agitation of the matter. Perhaps a radical cure is not to be expected, but a compromise may be effected. The necessities of our domestic architecture, the warmth insured, and the quiet that carpets secure, will effectually prevent any attempt at removal; but the same objects may be obtained from small rugs, which can be frequently dusted and at somewhat longer intervals taken to the cleaners for thorough steaming. Large carpets fastened to the floor, and to a less extent large rugs, not easily taken up for dusting, should be condemned.

A general spread of knowledge concerning the growth and diffusion of microörganisms will do much to secure the needed reform, but until public attention and fear are aroused nothing can be done.

CORRESPONDENCE.

"SENDING INVALIDS AWAY FROM HOME."

To the Editor of THE MEDICAL NEWS,

SIR: After reading Dr. Rogers's communication on "Sending Invalids Away from Home," in THE NEWS, I feel it my duty to indorse his views, and to add a word or two myself. The study of climatology and the selection of sanitaria are of great importance to the physician; but, unfortunately, they usually receive but little attention from the practitioner. How often is the advanced invalid sent far away from home, and from all that is dear to him, to be surrounded by strange sights and faces, in a strange land, whither he has been sent by a physician who had not taken the trouble to look sufficiently into the matter to qualify himself to decide the important question as to which particular climate or locality was most suitable for his patient's case.

In a paper that I read before the Philadelphia County Medical Society (February 24, 1886) there appears the following paragraph, which is so apropos that I quote it here: "How often have I met cases of advanced phthisis away from all the comforts of home and its surroundings, dying in a strange land, sustained only by hope and the fact that they were carrying out the physician's order. I wish that my words could only be made sufficiently impressive to picture to you as the subject comes up before me the many sad cases I have witnessed. It is easy for the doctor, who possibly knows that all hope is ended, and a fatal termination not very far distant, to say to his patient, Go to Algiers, go to Egypt, Australia, or Southern California. The poor unfortunate patient is at once inspired with hope; his weakened frame is sustained by the nervous energy which is brought by determination. The long journey before him is no obstacle; its discomforts are discounted, and yet he scarcely reaches his destination before nature gives way. The journey to a foreign land requires a degree of strength that is often surprising even to a man in good health. The wear and tear, the vicissitudes of temperature, the character of the cooking, the damp sheets and hard beds, are much more wearing than most of us imagine. Our Consul-General to Egypt some years ago told me that much of the business of the consulate was the caring for the baggage of the consumptives who had been sent from home in the last stages of the disease, to run down more rapidly, and

possibly die within two or three weeks of their arrival." One of the most shocking sights to the invalid travelling south is to run across the boxes with the death-certificates upon them, waiting for the northern trains. Although I have the greatest possible faith in change of air and residence in a suitable climate for those in the early stages of disease, or when a predisposition exists, or during convalescence, I am strongly opposed to the method at present adopted of recommending places in a general way, regardless of their suitability and other matters as important as the climate itself. A physician should know thoroughly the place to which he sends his patient. He should be as familiar with it as with the drugs he orders in his prescription.

Patients should be sent away in the early stages of their malady. They should remain away long enough to eradicate all traces of the disease that caused them to seek an equable climate, and, if their home is in the Middle, Eastern, or New England States, they should not return until summer has begun.

A three years' residence in Southern California has convinced me that patients must come early in their disease and remain long, otherwise their trip will prove futile, if not fatal. WILLIAM A. EDWARDS, M. D.

SAN DIEGO, CALIFORNIA.

A RATIONAL MEDICAL NOMENCLATURE.

To the Editor of THE MEDICAL NEWS,

SIR: In an editorial in THE MEDICAL NEWS of October 24, 1891, you refer to the importance of employing names descriptive of objects indicated, discountenancing the use of proper names. This evidently is the correct view to take. The sooner we change the course of this evil tendency the better. If the present mode of naming diseases, instruments, operations, and drugs be continued, medical literature will become a collection of meaningless terms, unintelligible even to the most scientific reader.

In the present advanced stage of medical science, it appears to me that our nomenclature should be technical; grave errors are frequently committed by misunderstanding terms, which could be avoided by adopting a universal technical nomenclature.

The use of proper names confuses the mind, encumbers the memory, and deforms the beauty of medical literature. Proper names should be used only from a descriptive or historic standpoint.

A recent number of one of our leading medical journals contained an article on "Supra-pubic Cystotomy," which forcibly illustrates the subject in question. It was said that "a soft catherer is inserted, and the bladder filled with eight ounces of warm *Thiersch's solution*, which is allowed to flow out through the catheter. . . . If the bladder is deeply sunk in the pelvis, the *Barnes dilator* may be inserted per rectum, filled with four to five ounces of warm water. . . . The most satisfactory instrument for removing tumors of the bladder is the *Spencer Wells* ovarian sac *clamp*. . . . The *Paquelin cautery* point may now be introduced and the base of the neoplasm seared over. . . . Temporary drainage is satisfactorily secured by the *Trendelenburg T-tube*. . . . Occasionally a small fistula may persist, which will require either to be packed with iodoformized gauze or scraped out with a *Volkmann's spoon* to insure its closure."

One may affirm, without fear of being accused of exaggeration, that the value of the article from which this extract is taken is greatly impaired by the use of proper names. H. F. SLIFER, M.D.

NORTH WALES, PA.

"PULMONARY TUBERCULOSIS AND MALARIAL FEVER."

To the Editor of THE MEDICAL NEWS,

SIR: It may be a question in the minds of some medical men whether or not pulmonary tuberculosis is ever diagnosticated malarial fever by physicians within the pale of the profession. It is my impression that the mistake is quite frequently made.

While attending the International Medical Congress at Berlin, a patient in the last stage of pulmonary tuberculosis, who had been under my care, fell into the hands of a physician who diagnosticated the case as one of marial fever, stating to the friends of the patient that he was "no death-angel," and that he would soon have the patient restored to health. Before the patient passed out of my hands there were large cavities in the apices of both lungs, and the objective symptoms were as pronounced as those described by Charles Dickens in the case of Smike: "There were times, and often too, when the sunken eye was too bright, the hollow cheek too flushed, the breath too thick and heavy in its course, the frame too feeble and exhausted, to escape regard and notice."

Notwithstanding the subjective and objective symptoms, and the fatal termination of the case, the physician believes or affects to believe that his diagnosis was correct, although "a little off" in prognosis.

Your editorial on this subject in THE MEDICAL NEWS of the 14th of November elicits the statement made above. J. F. JENKINS, M.D.

TECUMSEH, MICH., November 18, 1891.

SHOULD PHYSICIANS DISPENSE THEIR OWN MEDICINES?

To the Editor of THE MEDICAL NEWS,

SIR: Your article, "Physicians Should Dispense Their Own Medicines," will no doubt excite some discussion among physicians, and especially among pharmacists. The conscientious pharmacist cannot deny that there is a great deal in favor of this plan, although if carried out it would take the bread and butter from under his nose. At the present time every druggist must admit that cutting in prices is the increasing evil; that selling proprietary medicines at cost, and even below cost, is *indirectly* working harm to the physician as well as to his patients. Has it ever occurred to the physician that, in order to pay the large running expenses of a pharmacy in a great city, a big profit must come in somewhere? If it is not made on proprietary articles in combination with drug-trade and prescription-trade, then it must be made on the latter entirely. This intense cutting has caused unscrupulous druggists to lower their prescription rates to such an extent that in order to make any profit at all an inferior grade of drugs must be used, or an inferior class of prescription-clerks employed, and con-

sequently the life of the patient and the doctor's reputation are placed in jeopardy. It is my candid opinion that the physician whose practice is among the poorer class of people will run less risk to his reputation and put his patients in less danger by dispensing his own medicines, knowing that they are obtained from reliable laboratories; at the same time he will be striking a blow against hospital and dispensary evils and all irregular practice. Respectfully,

HENRY F. C. MÜLLER, M.D.

BROOKLYN, N. Y., November 29, 1891.

IDIOSYNCRASY.

To the Editor of THE MEDICAL NEWS,

SIR: An editorial in THE MEDICAL NEWS of November 14th impels me to record a striking instance of idiosyncrasy of which I am myself the victim. Early in my professional career, more than thirty years ago, I learned that the presence of the minutest quantity of ipecacuanha in the atmosphere was sufficient almost instantaneously to induce violent sneezing, with an attack of severe coryza, in conjunction with which asthmatic paroxysms occurred. Unwilling to surrender the use of ipecacuanha, I substituted a tincture for the powder. If in dispensing I soiled my hands with a drop or two of the tincture which I failed immediately to remove by washing, decided irritation was set up in those parts with which the soiled fingers came in contact. On each of the only occasions that I remember having taken ipecacuanha internally I suffered with excessive nausea, violent vomiting and retching, accompanied by a sense of burning pain and colic in the abdomen. In each instance I found speedy relief from the ingestion of castor oil. Yours truly,

JAMES MITCHELL, M.D.

MADISON, BOONE COUNTY, W. VA.

THE LENGTHENING OF TENDONS, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of November 28th you speak of the fact that a year ago, in ignorance of Dr. Rhoads's proposal for lengthening contracted tendons by splitting them, I published a paper describing the same operation, which was proposed to me by Dr. S. Weir Mitchell. I beg to call attention to the fact that in the *Lancet* of July 18, 1891, p. 109, Mr. Wm. Anderson, in his lectures on "Contractions of the Fingers and Toes," describes and figures precisely the same method, and he carried out the plan by operation on a young girl of seventeen, on October 18, 1889. It will be observed that while the idea seems probably to have been original with Dr. Rhoads, Mr. Anderson, and Dr. Mitchell, the first publication is certainly to be credited to Mr. Anderson. Yours, very truly,

W. W. KEEN.

NEWS ITEMS.

Dr. E. von Esmarch, son of the distinguished surgeon of Kiel, has been appointed Professor of Hygiene at Königsberg, succeeding Fränkel, who has been called to Marburg.

A new Russian Pharmacopœia is about to be published.

Gusserow recently celebrated the twenty-fifth anniversary of his accession to the chair of Gynecology at Berlin.

M. Pasteur has secured an annual subsidy from the French Government to enable poor persons living in France at a long distance from his institute to reach it in the event of their requiring his treatment.

Bamberger Fund.—The widow of the late Professor Bamberger has given a sum of eight thousand five hundred dollars, the interest of which is to be devoted for the benefit of poor, deserving students in the University of Vienna, irrespective of nationality or creed.

A Prize for African Investigations.—The King of Belgium has offered a prize of five thousand dollars, to be awarded in the year 1897, for the best presentation, from a sanitary point of view, of the meteorologic, hydrologic, and geologic conditions of equatorial Africa, together with the hygienic principles and rules to be observed in determining the mode of life, the character of nutrition, the form of occupation, the variety of clothing, and the kind of habitation. The essay must also include a consideration of the symptomatology, the etiology, and the pathology of the diseases peculiar to the country, together with the prophylactic and therapeutic measures to be adopted. Principles are to be formulated for the selection and employment of medicaments and for the establishment of hospitals and sanatoria. The investigations and the conclusions are to bear upon the conditions of life for Europeans in various parts of the Congo region. The competition is open to the world. The essays must be in the hands of the Minister of the Interior and of Public Education in Brussels by January 1, 1897.

The Adulteration of Drugs.—The Committee on Adulteration of the New York State Pharmaceutical Association recently made some investigations regarding the strength and purity of certain drugs extensively used in ordinary practice. Out of seventy-six samples of dilute acetic acid purchased in various towns between Poughkeepsie and Saratoga, only nineteen samples could be called good. The strength, which should have been 6.12 per cent., was found to vary from 0.8 to 29.8 per cent. Of forty-six specimens of Hoffmann's anodyne only five were good. Thirty prescriptions calling for stronger ether produced all sorts of make-believes; one druggist even sent a mixture of chloroform and alcohol. Only three out of fifteen samples of potassium iodide were respectable. This is heartrending. If we cannot have good iodide we might as well give up practising medicine. We think, Mr. Druggist, we shall have to come to a better understanding with you about these little matters, or else we shall have to dispense our own remedies, which custom you do not seem to approve.—*The Physician and Surgeon*, November, 1891.

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ORIGINAL ARTICLES.

OPERATIVE TREATMENT OF THE DEFORMITIES RESULTING FROM INFANTILE SPINAL AND CEREBRAL SPASTIC PARALYSES.

BY DEFOREST WILLARD, M.D., PH.D.,

CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY, UNIVERSITY OF PENNSYLVANIA, AND SURGEON TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

INFANTILE spinal paralysis and cerebral spastic palsy are diseases entirely different in their pathological conditions, their symptoms, causes, and prognosis. The one is due to an anterior poliomyelitis, with changes in the anterior columns of the cord; the other to a destructive lesion of the cerebral motor-cells; but the late results demanding operation that will be considered in this article possess certain similar deformities in common, so that the two conditions may surgically be considered together. Of course, in the one case we have atrophy, loss of reflexes, paralysis of certain groups of muscles, etc., while in the other we have rigidity, paralysis with muscular spasm, irregular and uncertain contractions, but little real and sometimes no apparent wasting of the limbs, and the electrical reactions are not lost. The reflexes are also exaggerated in the cerebral type.

The permanent results obtained by operation are much better in infantile paralysis, for the reason that the disease that has occasioned the deformity, although permanent in its effects, may be said to be definitive, and without that tendency to relapse that is seen in cerebral palsy; yet even in the latter class of cases a certain degree of benefit is attainable.

In an article read before the Tenth International Congress at Berlin in 1890, I showed the results that could be obtained from surgical procedures in a large majority of cases of infantile paralyses even when they were helpless and apparently hopelessly deformed. The minor distortions were not considered, nor is it my purpose here to call attention to any but the almost desperate class of cripples in whom locomotion has become almost impossible, and who spend their lives upon the floor or upon a bed, and who are usually looked upon by physicians as beyond surgical relief. I have operated upon a large number of these cases, and am more and more convinced that those wholly beyond help are exceedingly few in number. While they cannot be made perfect and strong, yet by operation the power of locomotion can be greatly increased, and aided by the use of canes, crutches, wheeled apparatus, etc., strength of limb will be secured, greatly to the benefit of the physical, mental, and moral condition of the patient. As only the stronger muscles are divided, muscular equilibrium is assisted. The muscles operated upon are improved, and when some ability to walk is gained, increase of power by exercise is soon apparent. Let anyone who thinks that locomotion does not improve these limbs, look at the legs of a ten-year old boy with untreated club-foot, and at another similar case in which operation has been done early during this period of years, thus securing normal locomotion.

In spastic cases, of course, the improvement to be expected is far less. The disease is more centrally located, and the mental power of these individuals is decidedly defective. The improvement will be in proportion to the brain-power already existing.[1]

These children are brought to the orthopedic surgeon by parents expecting that skill can supply what Nature has denied them. I have sometimes had as many as a dozen new cases brought to my office in a single week, many of them hopeless idiots, but whose deluded parents thought them bright, intelligent children. This delusion being such a happy one, it is often unkind to attempt to explain to parents the full degree of the idiocy. While an injured brain-cell can never be replaced by a good one, yet I am fully convinced that great physical, mental, and moral benefit is to be derived from placing these individuals in the upright position upon some form of locomotive apparatus. I am very careful, however, as regards the prognosis.

Mechanical measures as preventives of deformity are exceedingly important, but for purposes of rectification they cannot take the place of surgical procedures. I consider it barbarous to attempt to rectify the deformities in this class of cases by the long and painful process of pressure, when, during a few minutes of anesthesia, surgery is capable of producing the results desired.

[1] I have been much surprised at the number of these spastic children, as in former years my experience had been largely among infantile spinal cases. I note, however, that Townsend and Zacks have found that they stand in the proportion of 39 per cent. spastic to 61 per cent. infantile. N. Y Med. Journ., May 21, 1891; Trans. Med. Soc. State of New York, 1890.

After operation, the limb is in nowise inferior in strength and development to the one afforded by mechanical measures, while the serious loss of time and money and the pain incurred in the latter slow method certainly demand consideration. No physician has a right to take money from patients by a slow, painful, and expensive method, when it is so entirely unnecessary.

When infantile cases are neglected and proper preventive apparatus has not been used, deformity follows from: 1, Degeneration of muscles; 2, atrophy; 3, contractures; 4, deficient and retarded bone-growth; 5, distortion of skeleton produced by efforts at locomotion.

The deformities of contraction are usually in the direction of flexion. Generally speaking, surgical procedures should consist in the division of all the contracted tissues, whether tendons, muscles, or fascia. The great cause of failure is in the too limited division—not from extensive section. In the majority of cases *the tenotome* is sufficient for this work. Open incision is advisable when there is great risk of injury to the bloodvessels or nerves.

In hip-contractures a tenotome with a long shank, introduced in front of the anterior spinous process, is capable of safely severing the origin of the tensor vaginæ femoris, the sartorius, the long head of the rectus, and all of the contracted fasciæ. Strong pressure will usually complete the extension of the limb and rupture the remaining fascial adhesions, provided the patient is placed upon his face and the pelvis is properly fixed.

In cases in which the psoas or iliacus has become shortened, subcutaneous incision becomes too dangerous and open incision should be performed.[1]

For all operative procedures the rule should be to bring the limb into such a position that in locomotion it will be mechanically able to support the weight of the body. In hip-contractures in which at the time of the operation this cannot be entirely obtained, it may subsequently be gained by the application of pulley-and-weight extension in the horizontal position. This extension should be continuous, and it will usually result in benefit not only to the hip, but to the accompanying lordosis. The scoliotic spinal distortions so often found in these cases are the most troublesome element in cure.

Flexion of the knee may be relieved by tenotomy of the semi-membranosus, semi-tendinosus, and biceps. In old cases the contraction of the fascia is often very great, and when it extends to the mid-popliteal region, open incision should be performed. In a recent case, even after open incision, it was impossible to elongate the popliteal nerve, which was so displaced from thickening of its sheath that in a subcutaneous incision it would have been mistaken for a tendon.

The use of extreme force in straightening the knee after deformity should be avoided, because it is liable to produce posterior displacement of the head of the tibia. Unfortunately, this is frequently acquired from long continuance of the deformity, and, as described later, more radical measures for its relief may be necessary.

Deformities at the ankle and foot are very common in infantile paralysis, which has a special tendency to implicate the muscles of the lower leg. The deviation is in the direction either of flexion, extension, inversion, or eversion. In talipes equino-varus (the most common form of deformity), the section of the tendo Achillis only is seldom sufficient. The foot should be brought into the best mechanical position; this means, that in walking the foot should be brought squarely upon its sole, and that extension beyond a right angle shall be easily performed, without undue tension upon the tendon. Section of the tibialis anticus, tibialis posticus, and plantar fascia, and, in fact, of all contracted tissues should be thorough. It is better to bring the foot straight at the time of operation than to half do the work, and then torture the patient by subsequent attempts at mechanical rectification. As the internal plantar artery is a small vessel, its division is of no consequence. All the tissues should be divided, even the lateral and plantar ligaments, if necessary. Powerful force applied over a hard sand-bag as a firm fulcrum is often necessary to secure complete rectification. On the inner side of the foot, subcutaneous division heals more quickly and leaves less deformity than open incision, but the division of all the tissues, save the skin, is nearly the same in either case.

In valgus cases the mistake is often made of supposing that only the peroneals are contracted. This is owing to the fact that the anterior part of the foot can easily be brought into such position that flexion can apparently be made decidedly beyond a right angle. The error arises from the fact that undue motion is obtained at the medio-tarsal joint, which, with the sinking of the scaphoid bone, gives the appearance of full normal flexion. A skilled examination of these cases will show that the articular facet of the calcaneus does not by any means assume its normal relation with the tibia and fibula. That which apparently was full flexion of the foot, is in reality not so at all, since the tendo Achillis is entirely too short to permit of the proper relation. The inferior calcaneo-scaphoid ligament is elongated, the result being a distortion of this articulation, a painful condition of flat-foot and a tender scaphoid that renders locomotion extremely difficult and painful. This mal-position of the os calcis, from the contracture of

[1] Had I performed myotomy subcutaneously in a recent case I would most certainly have divided the anterior crural, which lay externally to its normal position.

the calf-muscles, is very common and is often overlooked. This was markedly illustrated in a case recently under my care. The anterior part of the foot could apparently be brought far beyond the normal angle of flexion, and yet the os calcis remained decidedly in the position of extension and required fully half an inch of material in the tendo Achilis to permit a proper position to be attained. When the tendo Achillis is thus contracted, the strain in walking brought upon the calcaneo-scaphoid articulation is, as stated, very great, and its results harmful. For easy walking, flexion of the foot should be possible for from fifteen to twenty degrees beyond a right angle.

Section of the tendo Achillis, as well as of the peroneals, is, therefore, an important matter in the treatment of those cases; nor should the forcible reduction and subsequent retention of the misplaced scaphoid by gypsum be omitted. Continued retention of this misplaced bone should be secured by the use of a support placed beneath the plantar arch, which will assist in holding the bone in position, while at the same time the position of the bones of the foot should be altered by raising the inner side of the sole of the shoe so that the individual walks as upon the side of a hill. Care should be taken in the primary dressing to bring the calcaneum into its proper position.

For the primary dressings after any or all sections I prefer plaster-of-Paris. It sets rapidly, secures absolute rest, and favors healing. If swelling occurs, the cast may be slightly opened, or windowed, or if necessary removed.

In talipes calcaneus an open incision over the tendo Achillis, the removal of a section, and the suturing of the two cut ends with sterilized catgut will be helpful.

Under antiseptic conditions the subcutaneous operation is a safe one. I have performed it hundreds of times, and have never had a case of suppuration. If a surgeon operates upon a dirty foot with septic instruments he must expect poor results. Very few attendants will properly cleanse the epithelium from a deformed foot.

Open incision, with splitting and suturing the tendon, has been recommended on the ground that by the subcutaneous method we do not secure the exact amount of material required. I certainly have never experienced this difficulty, and, except in calcaneus, I see no occasion for the employment of the open method. If the foot is fixed in the proper position, Nature will supply the exact amount of material required, and the resultant tendon will be just the one necessitated by the case. I have had two and three inches inserted in a tendon and never had weakness as a result. I would expect to have such an accident if after the operation I followed the British plan of dressing the foot in the deformed position and then attempted later to rectify the deformity. Nature is perfectly capable of throwing out the one hundred parts required to bridge this gap, and will undoubtedly do so when called upon. When dressed in the deformed position possibly fifty parts are deposited which are necessarily incapable, when elongated, of filling the gap. A hundred parts could just as easily have been secured.

The question of age is of no special importance except as regards bone-distortion. Prompt healing of the tendons may be expected if careful antisepsis has been employed and subsequent rest enforced.

Resection of the knee is sometimes necessary when the displacement of bone is very great and when the distortion of the head of the condyle or of the head of the tibia is very marked. It is also sometimes desirable in a frail limb, when apparatus cannot be afforded and when a stiff knee will be of more service; also when there is a bad condition of genu-varum, valgum, or recurvatum.

In old cases resection of the astragalus or of other tibial bones is occasionally necessary, but, as a rule, thorough division of the contracted tissue and extreme force will rectify this condition.

Although sometimes justifiable, it is but rarely that amputation or osteotomy will be necessary.

Mechanical appliances. Rest should be maintained until all danger from inflammation is past. After two weeks crutches may be used and mechanical appliances employed. No rules can be given for the making of the apparatus. It must be so adjusted that it will keep the limb in the best position for walking and as accurately as possible in the normal position. Feeble muscles must be assisted by elastic or spring force, and, as necessary, a stop-joint or a locked joint employed. Every muscle should as early as possible be compelled to do its fullest possible work. In many cases with which we have to deal it is impossible to expect voluntary locomotion at first. Patients must be assisted by wheeled crutches or by crutches or canes in addition to apparatus. These appliances are as necessary to these cases as is an artificial limb to a man whose leg has been amputated. Electricity, massage, gymnastics, etc., should never be omitted.

Simple tenotomy of all the contracted flexor tendons is usually required. Myotomy of the adductors is also quite frequently necessary. The necessary operative procedures have already been described.

I present a few illustrative cases:

Case I.—J. C., seventeen years of age; infantile paralysis. Thighs flexed permanently. Has not walked for two years. Right foot equino-valgus; left, equinus. Pelvis, greatly tilted. Extreme lordosis; excessive lateral curvature of the spine with

marked rotation, protrusion posteriorly of left thorax. Arms, strong. The condition is shown in Fig. 1.

Tenotomy of the tensor vaginæ femoris, of the semi-membranosus and the semi-tendinosus on both sides; also of the tendo Achillis on both sides and of the peroneals on the right. Forcible extension and retention in plaster-of-Paris. Apparatus applied in six weeks. Legs still very helpless. Must walk on crutches for some time. Great difficulty in applying the apparatus on account of the lateral and backward tilting of the pelvis, which can never be cured, although extension and counter-extension while in bed has greatly helped the condition.

FIG. 1.

CASE II.—W. W., fourteen years of age; infantile paralysis in childhood. Has never walked since. Legs absolutely helpless. Flail legs from hip. No voluntary action in foot or toes. Excessive lordosis from tilting of the pelvis, which was raised on the right side three inches above the left. Excessive lateral curvature with rotation of the vertebræ and prominence of the left thorax posteriorly. Arms also extensively atrophied and very helpless. Flexion at thigh to a right angle; at knee nearly the same. Right foot, equino-varus; left, valgus. The whole body greatly emaciated and from insufficient food illy nourished.

The child was so feeble that after tenotomy on one side had been performed, it was necessary to wait several weeks before the other side could be operated upon.

Tenotomy of the tensor vaginæ femoris, the sartorius, and long head of the rectus, the hamstring tendons, and the tendo Achillis on both sides. The knees and feet were brought straight, but the thighs could not be put in normal position; nor could the pelvis be brought into its proper relation to the spinal column, because the latter was so greatly distorted. Long extension and counter-extension, however, added to the benefit obtained at the time of operation, but even after an apparatus with rigid joints was applied from the thorax to the feet, the arms were incapable of supporting the patient upon crutches. A wheel-crutch (see Fig. 2) was therefore constructed in order to support the weight of the body until locomotion could assist in giving some power to the legs. With this he was able to progress very well. A leather jacket encircled the body. Six months later the increase in the size of the legs was much marked, and the boy could knock them straight from the hip.

FIG. 2.

CASE III.—L. C., fourteen years of age; infantile paralysis in infancy; has never walked since except with apparatus with rigid joints. Flexion of both knees; hips and ankles are in good position; lateral curvature of the spine, with left rotation. Section of the hamstring tendons. Apparatus constructed; leather jacket; movable joints in apparatus, with elastic strings to assist all weakened muscles. With such assistance, after three months he was able to walk a mile. He was kept in plaster-of-Paris dressing for four weeks.

CASE IV.—J. M., eleven years of age; absolutely helpless from infancy; has never walked. Great flexion of hips and knees; feet but slightly distorted, as they have never been used. Tenotomy; plaster-of Paris dressing; apparatus. Walked with crutches at the end of six weeks, with cane at the end of seven months, and is still improving.

CASE V.—A. M., ten years of age; has never walked since an attack of infantile paralysis at one year of age. Hips and knees in fair condition; talipes equino-varus of left foot; equino-valgus of right foot.

Section of tendo Achillis and of the contracted fascia on the left side, and of the same tendon and of perineals on the right; plaster-of-Paris dressings; apparatus in five weeks. At the end of five months walking without cane and without fatigue for several blocks.

CASE VI.—R. C., three years old, has never walked, except upon all-fours, as shown in Fig. 3. Flexion at right angle. Section as described. Can now walk on crutches, and is gaining strength.

Fig. 3.

CEREBRAL SPASTIC CASES.

I am confident that in these cases the benefit to be derived from locomotion is not to be gained by any other means. The effect upon the physical well-being is marked; mental development occurs and is assisted by bringing the individual into contact with the world, an effect that should not be underrated. Some may say that brain-cells cannot be replaced. This is certainly true, but, as in a case of enfeebled muscles, constant exercise tends to stimulate growth and development. This action may be described as a benefit to be derived from without inward, but it is nevertheless positive. That it can produce a fully developed mind no one claims, nor can fully developed muscles be secured, but at the same time the gain derived is positive and decided.

The most common deformity in spastic cases is flexion of hip and knee, with contraction of the gastrocnemius and soleus. Adduction of the thigh is also frequent. All the deformities increase greatly as soon as the patient stands upon his feet.

In dressing these cases, I usually over-correct the equinus, them apply gypsum bandages to retain it in this position. The knee is then rigidly fixed in a straight line, and a continuous dressing from feet to perineum is applied. This permits complete and perfect abduction, to be secured by simply separating the feet.

After myotomy of the tensor vaginæ femoris and fascia, the weight of the plaster-cast is usually sufficient to lessen the hip-flexion, but weights are sometimes necessary. The hip-flexion is the one most liable to relapse when the upright position is resumed; hence I often use the wheel-crutch for a time, in order to take off the weight of the body.

Apparatus for these cases is often very complicated and expensive, and even then insufficient. I have long tried to secure a wheeled support for these unfortunates, but all those in the market are so expensive as to place them far beyond the reach of a large number of sufferers. With the valuable and helpful assistance of Dr. George E. Shoemaker, I have now constructed such a support that is both practical and cheap. To save expense we must use material that is already in the market. The running-gear of baby-coaches, or of children's express-wagons, or buckboards are utilized. These can be procured at from four to six dollars a set. For young children, or for those so feeble-minded or feeble-muscled as to require attendants, a baby-coach running-gear frame can be utilized so that it can be guided or pushed.

Upon the frame is erected a crutch-support. The crutch-head can be raised or lowered by a nut and thread. Jar is prevented by rubber washers. The width of the crutch-heads will vary with the diameter of the thorax. For very helpless cases a broad supporting belt of leather encircles the chest. For children who are strong and able to control themselves, the hind wheels are similar to the fore ones, but the latter are pivoted, as in rolling-chairs, ward-carriages, etc., thus permitting movement in any direction.

In hospitals with long halls a longer apparatus with self-steering gear, as seen in the illustration, may be employed, and is very useful in educating patients to walk. When an infantile paralytic, say fourteen years old, has never been up on his feet, it is not to be expected, even for a long time, that he will know how to use his feeble muscles. In spastic cases, many who cannot walk at all without this apparatus can by its aid make very comfortable progress.

The following are illustrative cases:

Case I.—Cerebral spastic paralysis from birth. Walks on tips of toes; toes inverted in position of talipes equino-varus; knees, thighs, and adductors flexed; moderate degree of mental impairment; marked internal strabismus; cannot walk without support, and then with the usual staggering gait.

Section of the tendo Achillis and of the adductors. Knees forcibly straightened and retained by plaster-of-Paris dressing from toes to perineum; limbs widely parted and fastened; apparatus applied. In six weeks heels well down upon the floor, although still pigeon-toed.

Case II.—G. B., nine years of age. Very low degree of mental development; unable to talk, but

can articulate a few words; unable to stand except with support. When voluntary motion is attempted, hips, arms, and legs are in a state of constant spasm.

Tenotomy of the hamstring tendons and tendo Achillis both sides; extension in bed. Wheel-crutch constructed so as to be pushed by a nurse like a baby carriage. In this manner patient is able to progress with much less spasm, and can bear considerable weight on his legs. No improvement in mental condition anticipated.

CASE III.—L. L., one year of age. Suffered injury by forceps at birth. No decided depression discovered in skull; very feeble intellect; can only stand when supported; talipes equinus in both feet.

Section of the tendo Achillis. Put upon a wheel-crutch at the end of six weeks, and with the aid of a nurse could walk with much comfort and pleasure.

CONCLUSIONS.—1. The deformities of infantile paralysis can be prevented by apparatus, but if this has been neglected and distortion has occurred, secure the best possible limb by immediate surgical procedures, and in some way make the patient walk.

2. Apparently hopelessly distorted cases can be put upon their feet. Even great deformity of limbs resulting from infantile spinal paralysis should not deter us from the attempt to straighten the limb and give the individual the power of locomotion.

3. Atrophied limbs can be straightened and can then be incorporated as a part of the locomotive apparatus.

4. Exercise is capable of developing even badly shrunken limbs, and continuous improvement may be expected.

5. In the majority of cases, easier, quicker, and better rectification is secured by surgical than by mechanical measures. In order to avoid pain and save time, immediate rectification, if possible, should be the rule.

6. After straightening, mechanical appliances in the shape of apparatus, canes, crutches, wheeled crutches, etc., are usually required and should be employed.

7. Tenotomy and myotomy do not cure the disease in either form of paralysis, but the results are most helpful in promoting the health and happiness of the individual.

8. Wheeled crutches are very helpful in getting these helpless individuals upon their feet. These supports can be made of inexpensive material and on a simple plan.

9. In spastic cases relapse is much more common than in infantile paralysis, but the great benefit to the body and mind of the individual that is secured by locomotion amply repays for the attempt at rectification.

THE DIAGNOSIS OF CEREBRAL HEMORRHAGE.[1]

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"OF all the diagnostic problems presented to the physician," says Gowers, in his work on *Nervous Diseases*, "that of cerebral hemorrhage is at once the most difficult and urgent." The diagnosis is simplified if recovery from the acute manifestations occur. It is in the grave and fulminant cases that the diagnosis is most difficult, and it is just in these cases that it is most important. Nothnagel, in *Ziemssen's Cyclopedia*, states that "the diagnosis, of hemorrhage or of embolism or of thrombosis cannot in any case be unreservedly made." With these qualifications let us endeavor to summarize and arrange side by side the special features that distinguish cerebral hemorrhage from those conditions that may simulate it. To no condition more than to cerebral hemorrhage applies with emphasis the statement that there are few pathognomonic signs in disease. Among other causes, the symptoms in this condition are due to the results of pressure, suddenly induced, and to destruction of cerebral tissue. Any other state, in which like influences are active, will be attended with similar manifestations.

In a consideration of cerebral hemorrhage all the forms of intra-cranial extravasation of blood are sometimes included. All display many symptoms in common, but there are certain features that, when present, distinguish the one from the other.

Let us first briefly pass in review the more common symptoms of intra-cranial hemorrhage. The two most prominent and characteristic are loss of consciousness and impairment of motion. Either may be present in varying degree. The second may not become evident until the first has passed away. The loss of consciousness may occur suddenly—constituting the so-called apoplectic shock—or it may set in gradually. It may be transient or protracted, and of an intensity from the slightest to the most profound. There are no true prodromata, except in cases of ingravescent apoplexy, in which the hemorrhage takes place gradually. So-called prodromata are usually due to the existence of the conditions favorable to the production of hemorrhage or to the occurrence of minute capillary hemorrhages.

In the attack, the breathing is usually slow, labored, noisy, but it may be rapid and shallow. The face is apt to be flushed, but it may be pale. The pulse is often slow, hard, and full, but it may be weak, rapid, and irregular; the carotids

[1] Read before the Northern Medical Association, June 12, 1891.

may pulsate. The pupils may be dilated or contracted, perhaps unequally, but they are usually sluggish or immobile. Perhaps even during the coma some difference between the muscular tone on the two sides of the body may be detected. The reflexes may be absent or exaggerated, but they are likely to differ on the two sides. Control of the sphincters may or may not be lost. Convulsions may occur, but are uncommon. There may have been nausea and vomiting. The head and eyes are usually turned from the side on which the paralysis occurs and toward that on which the lesion exists. The patient may die without emerging from the coma. Should consciousness return, the loss of muscular power becomes more evident. The temperature during the initial stage was perhaps subnormal, but now rises several degrees above the normal. The general symptoms gradually ameliorate, and in the course of several months there remain only those dependent upon the direct injury that the brain has suffered. The paralysis is usually of the hemiplegic type. The leg, arm, and face are paralyzed on the side opposite when the lesion is situated above the decussation of the fibers of the facial nerve, at the middle of the pons. The tongue, protruded, deviates to the paralyzed side. The lower part of the face is affected. The orbicularis palpebrarum and the occipito-frontal muscles are not involved. The face is drawn to the unparalyzed side, the angle of the mouth droops, and saliva dribbles. If the lesion is situated in the lower half of the pons the facial fibers are affected on the same side as the lesion, and the leg and arm on the opposite side. The asymmetry is evident when an attempt is made to pucker the lips, as in whistling, or in showing the teeth. Emotional movements, however, are symmetrically performed. Gradually there is some restoration of function, greatest in degree in least specialized parts and in those that participate in bilateral movements. The knee-jerk is exaggerated. Associated movements occur. Mental deterioration sets in.

The diagnosis would be easy if every case presented such a complete clinical picture; but in individual instances the symptoms are present in varying degrees of completeness. Again, cases are not always seen from the onset, and the history is frequently wanting.

In making the differential diagnosis cases of cerebral hemorrhage are to be separated: 1, from disorders due to intra-cranial lesions; 2, from conditions due to remote pathological changes. The distinction is further to be made from affections that for the want of a recognized lesion are called functional, such as epilepsy and hysteria. Probably in all of these conditions the symptoms arise from influences acting upon the cerebral cells and structure, but, on the one hand, the impression is direct and local, while, on the other, it is transmitted through the circulation as a result of changes extraneous to the cranial cavity. Let us first consider the latter.

Uremia may set in with convulsions, followed by coma. Convulsions are not common in cerebral hemorrhage. If they occur at all, they are more apt to appear late rather than as the initial symptom of an attack. As a rule, the coma in uremia is not so profound as in hemorrhage, though, as already stated, in the latter it may be of any degree of intensity. The existence of Bright's disease may have been known prior to the attack, or albumin and tube-casts may be present in the urine, but as the conditions present in Bright's disease are predisposing factors in the causation of cerebral hemorrhage, too much stress cannot be laid upon these points; besides, it is recognized that albumin appears in the urine in cases of cerebral hemorrhage uncomplicated with disease of the kidney. The temperature is at first apt to be low in uremia, as in hemorrhage, but there is no secondary elevation, unless there be a complicating inflammation.

Cerebral edema may be associated with a uremic attack, and give rise to motor symptoms, but, should the patient rally, these prove but transitory. Ophthalmoscopic examination may reveal the existence of an albuminuric retinitis. In uremia, the writer has observed that the breath and body have a peculiar musty odor, not encountered in cerebral hemorrhage.

In diabetic coma, in contradistinction to cerebral hemorrhage, the loss of consciousness is not abrupt. It may set in with somnolence. The pulse is weak and rapid. There is no paralysis. The breath may exhale an odor resembling chloroform. Then, an examination of the urine reveals the presence of sugar, while other manifestations of diabetes may also be evident.

In alcoholism the diagnosis may be embarrassed by many doubts. Examination of the urine may detect the presence of alcohol. Anstie's test consists in the production of a bright emerald-green color by the addition to fifteen minims of urine of one part of a solution of one part of chromic acid in three hundred of sulphuric. The patient, however, may have been drinking when the hemorrhage occurred, or stimulants may have been administered with the onset of the attack. The absence of the odor of alcohol in the breath and the absence of alcohol in the urine are more significant, and strengthen the probability of the existence of hemorrhage. Indulgence in alcohol, too, is an exciting cause of hemorrhage into the brain. In the stupor from alcoholism, however, the patient can be aroused by appropriate stimuli, as by ammonia or by shouting. The pulse is soft and rapid,

there is muscular relaxation, but no paralysis, and the reflexes are not altered from the normal. The pupils are dilated, the conjunctivæ injected. The temperature may be subnormal, but there is no secondary fever. Recovery, should it take place, is comparatively rapid, and may be facilitated by inhalations of ammonia or by evacuating the contents of the stomach and bowels. Edema of the brain may be present, as in uremia, increasing the difficulty of diagnosis.

In opium-poisoning the coma occurs gradually, the pupils are small, but equal, the breathing is feeble, shallow, and infrequent, and there may be vomiting. The patient, however, can be aroused, and he responds to stimuli. There is no paralysis, no elevation of temperature. If no complication exists, under appropriate treatment the return to the normal condition is rapid.

In poisoning by chloroform or by hydrocyanic acid, the odor of the breath is distinctive. In the first the heart's action is rapid and tumultuous, the pupils are dilated, and there is general anesthesia. In the second, inspiration is peculiarly short, and expiration is prolonged and labored. In the case of both, the sequelæ of cerebral hemorrhage are wanting.

In asphyxia, from whatever cause, the breathing is embarrassed, and there are all the evidences of respiratory obstruction. The face is livid and congested. Convulsions and coma ensue, and if the cause be not removed death follows. The symptoms are general, not local or unilateral.

In syncope and in cerebral anemia the conditions are much alike. The face is pallid, the pulse is rapid, feeble, fluttering, the respiration is sighing, the extremities are cold, and there may be nausea and vomiting—all of which may be improved by the exhibition of stimulants.

Cerebral congestion may be owing to fulness of the veins due to obstruction, or to deficient *vis à tergo*, or to fulness of the arteries from cardiac overaction. Should loss of consciousness occur it is of but brief duration, or only partial. Loss of power is slight or absent, and not lasting, while there are no variations of temperature and the symptoms are speedily recovered from. Most probably there have also been previous attacks of the same kind.

The facial palsy resulting from cerebral hemorrhage is to be distinguished from paralysis of the muscles supplied by the facial nerve as a result of disease of the nerve or of its nucleus, by the escape of the orbicularis palpebrarum and the occipito-frontal muscles; by the fact that associated and emotional movements of the face are symmetrically performed, and that atrophy and degenerative reactions do not follow.

Hemorrhage into the cord or spinal apoplexy also occasions paralysis, but usually in the form of paraplegia. It is most apt to occur in the young, with a history of syphilis. The patient feels a sudden, sharp, stinging pain in the back. There is no loss of consciousness, or should there be it is but passing. If the hemorrhage is into the membranes, there will be tonic convulsions of a tetanic character.

Epilepsy ought not to be confounded with cerebral hemorrhage, but, seen in the stage of unconsciousness, some doubt may arise. The diagnosis of convulsions symptomatic of intra-cranial disease is intimately connected with a recognition of the exciting cause. In so-called idiopathic epilepsy convulsions precede coma, the tongue is apt to be bitten, there is no paralysis, the temperature may be elevated, but it is not at first depressed, and there is a history of previous attacks.

Sunstroke occurs at a particular season of the year, during the heated term. If cerebral hemorrhage shows any preference for season, the larger number of cases in this climate occur in the spring. In sunstroke the temperature is from the outset high, at times exceedingly so, and the skin is dry and burning. Coma is ordinarily not protracted or profound. Headache and vesical disorders may be sequelæ—paralyses never.

It can be readily enough conceived that symptoms of cerebral hemorrhage may develop in an hysterical person; but one ought not to be deceived if he bear in mind the age of the patient, the sex, and perhaps a known menstrual derangement. A discriminating eye will be able to distinguish the feigned attack from the genuine one. On the other hand cerebral hemorrhage may occur in an hysterical individual, and the manfestations of the one should not be permitted to obscure the more grave condition.

The distinction of cerebral hemorrhage from other pathological intra-cranial conditions divides itself into the differential diagnosis of the various kinds of hemorrhage, with some reference to their location, the separation from vascular obstruction and that from other varied conditions.

Should abscess of the brain give rise to loss of consciousness, this is apt to have been preceded by other symptoms. A cause for an abscess may be found in some previous injury or contiguous inflammation, or a general pyemic condition. Chills, fever, and sweats are apt to have occurred, perhaps with symptoms of pressure. Hemorrhage may take place into an abscess, adding its own peculiar symptoms to those previously existing.

Hemiplegia or local palsies may result from tumors of the brain. These are most commonly gliomata, gummata, or tuberculomata. Their favorite situation is at the base. They are marked by intense headache and papillitis, the symptoms are slow

in onset and progressive in course, so that if loss of consciousness occurs and manifestations of an apoplectic seizure appear, they do so in the last stage of the disease. Convulsions may also occur. The existence of tumors in other parts of the body may afford material aid in the recognition of a growth in the brain.

Concussion of the brain, contusion, laceration, and compression, result from varying degrees of violence and present gradations of cerebral disturbance. Concussion occasions the symptoms of mild shock: pallid face, weak pulse, shallow respiration; the symptoms are of brief duration, unattended with the sequelæ of hemorrhage. Contusion and laceration are conditions difficult to recognize and present symptoms varying in intensity from those of concussion to those of hemorrhage. In compression, there are present conditions that give rise to some of the manifestations of hemorrhage. In all of these the diagnosis essentially depends upon the recognition or the knowledge of the antecedent causative agency.

Meningeal hemorrhage may result from traumatism or from the bursting of an aneurism; it may be a complication of thrombosis of a cerebral sinus; it may occur in infectious diseases and in general paralysis of the insane. In the newborn, it is caused by violence during labor, from the application of the forceps, or by compression of the head in its passage through a narrow birth-canal. It is doubtful whether or not it is the more common in head-last labors. In these cases of birth-palsy, the manifestations of the lesion may not become apparent until later in life. A considerable number of cases of spastic paraplegia, congenital chorea, epilepsy, and idiocy are related to this condition. They may be recognized by the fact that the manifestations are not progressive, but stationary, and that there is no history of onset subsequently to birth. As a rule, the symptoms attending meningeal hemorrhage in adults are almost identical with those of extensive intra-cerebral hemorrhage. It may be that the paralysis is more extensive, involving perhaps all four extremities. The diagnosis largely depends upon a knowledge of the preëxisting condition (aneurism) or upon a history of injury.

In cerebral embolism, the diagnosis is based upon the existence of an endocarditis, of valvular vegetations, or of vascular atheroma or other source of embolus, upon the suddenness of onset, upon the transitory character of the symptoms, the limitation of the local manifestations, and the frequent occurrence of aphasia, together with right-sided hemiplegia. Convulsions are more common in embolism than in hemorrhage. There may be vomiting and transitory delirium. The younger the patient, the stronger the probability of embolism. The recognition of emboli in other organs strengthens the diagnosis. Among the causes of occlusion of the cerebral capillaries are pigment emboli, occurring in malaria, fat emboli, leucocytes, fibrinous formations, lime deposits, and intra-vascular conditions.

Thrombosis may occur in the arteries, veins, or sinuses of the brain. It may arise in conditions of general debility, from cardiac weakness, in blood dyscrasiæ, in vessels narrowed by atheromatous or fibroid disease, or by compression from without. The symptoms are gradual in onset and progressive in course, and vary with the site of obstruction. Following are some of the points of distinction from hemorrhage: Thrombosis is more apt than hemorrhage to occur in extreme old age; considerable degeneration of the arteries of the extremities is likely to be present; the heart is dilated, its action feeble and irregular; in hemorrhage the arterial tension is usually high, and the strongly acting heart is hypertrophied, retinal hemorrhage may also be present; thrombosis is more commonly associated with depression, hemorrhage with excitement; thrombosis is attended with prodromata and there may be local convulsions; should convulsions occur in hemorrhage, they are general; in hemorrhage, the loss of consciousness is more profound and of longer duration than in thrombosis; Jacksonian epilepsy and amaurosis may follow upon vascular occlusion; when death occurs it is not apt to be so sudden as in hemorrhage, while recovery may be complete. The clinical results, however, of softening and of hemorrhage may be identical.

Obstruction of certain vessels of the brain gives rise to special symptoms. Thus in thrombosis of the longitudinal sinus the face is apt to be cyanotic, from distention of the facial veins, or there may be epistaxis. In thrombosis of the transverse sinus, there may be edema of the structures about the external ear and mastoid process. Obstruction of the cavernous sinus may give rise to hyperemia of the optic disc, to edema of the eyelids and injection of the conjunctivæ, and to paralysis of the third, the fourth, the ophthalmic branch of the fifth, and the sixth nerves. Thrombosis of the basilar artery occasions symptoms resembling those due to tumor of the pons Varolii: epileptiform convulsions, optic neuritis, high temperature, crossed paralysis.

Finally, let us make brief reference to some manifestations peculiar to hemorrhage in certain locations.

Hemorrhages into the corpus striatum, into the lenticular or the caudate nucleus are attended with motor paralysis of the face and body on the side opposite to that on which the extravasation occurs, without any alterations of sensation.

Hemorrhages into the optic thalamus occasion no motor manifestations. Lesions in certain specified

regions cause decided and permanent anesthesia, with elevation of temperature upon the opposite side of the body.

Hemorrhages into the cortex set in with convulsions. These, with the attendant sequelæ, are focal in character. Extravasations into the anterior lobe may be attended with loss of the sense of smell upon the same side.

Hemorrhages into the crus cerebri are likely to be associated with paralysis and anesthesia of the limbs on the opposite side of the body and paralysis of the third nerve on the same side as that on which the lesion occurs. The crura, however, are rarely affected alone, and the symptoms will be merged with those resulting from involvement of other parts.

There is much similarity between the symptoms of hemorrhage into the pons and those of hemorrhage into the medulla. In both the temperature soon rises unusually high, the coma is profound, and death is commonly rapid. In hemorrhages involving the pons, initial convulsions are frequent and are usually general, though sometimes affecting only the legs. Often there is anesthesia. The pupils are markedly contracted and immobile. Vomiting is frequent and there is marked disturbance of the respiration. There is paralysis of the extremities on one side and of the face upon the same or opposite side, or upon both sides.

In hemorrhages into the medulla there may be diabetes, insipidus or mellitus, and paralysis of the tongue.

Convulsions are also present in hemorrhages into the ventricles. They may be exclusively tonic, or tonic and clonic. There is deep coma, soon followed by death. Such hemorrhages are common in the extremely young and extremely old.

The corpora quadrigemina are never alone involved in hemorrhage. Such symptoms as amaurosis, immobility of pupil, muscular tremblings, and convulsions might be present in case of their involvement.

In hemorrhage into the cerebellum there is often no initial paralysis. Sometimes there is hemiplegia on the side of the lesion. The absence of paralysis, however, is of more significance than its presence. Loss of consciousness may have been but temporary. Vomiting is frequent and persistent. There is incoordination of muscular movement and there may be compelled movements. Amblyopia, amaurosis, and mydriasis may be present.

In the preparation of this paper the works of Nothnagel, Fagge, Strümpell, Gowers, and Da Costa have been freely drawn upon.

THE TREATMENT OF ABSCESSES OF POTT'S DISEASE.[1]

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THE proper treatment of the various complications of any disease is a matter of fully as great importance as the treatment of the disease itself, and while opinions vary but little as to how to treat Pott's disease, such is not the case with respect to the abscesses that are such a frequent complication. Some recommend that every abscess be let alone, others that every abscess be opened. To follow blindly either extreme is certainly not good surgery, and with an endeavor to throw some little light upon the subject, I have studied during the past summer the histories of 380 consecutive cases of Pott's disease seen at the Hospital for the Ruptured and Crippled, New York, and in the private practice of Dr. Gibney and myself. In speaking of the cases no distinction is made between hospital cases and those in private practice, as the conditions varied so little. I have purposely omitted complicated cases, as of Pott's disease with hip, or knee, or ankle lesions.

Of the 380 cases, 75 were complicated by abscesses, and as the cases represented all stages of the disease, from the incipient case in which a positive diagnosis was scarcely possible to those that were convalescent and cured, we may say that about one case in five at some time during the disease develops an abscess. These figures vary somewhat from those given by Mohr, quoted by Bradford and Lovett, according to which, in 61 autopsies, there were 30 with abscesses, and in life, of 72 cases, 9 with abscesses. The abscesses were found connected with disease in the cervical region in 8 per cent. of the cases, in the dorsal region in 20 per cent., and in the lumbar region in 72 per cent. of the cases, which figures very closely correspond with those given by Michael and Parker.

We see by the foregoing that the problem most frequently presented to us is the treatment of abscesses connected with the lumbar region, and fully two-thirds of these are either in the pelvis above Poupart's ligament, or pass below the ligament and point in the thigh through Scarpa's triangle—the psoas abscesses.

Of late years the study of bacteriology has largely increased our knowledge of diseased processes, and shown that true inflammation is always caused by the presence of one or more kinds of pathogenic microbes. In other words, in acute abscess we find

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[1] Read at the meeting of the American Orthopedic Association held in Washington, September, 1891.

pus-microbes; in a cold abscess, however, such is not the case, and I will quote briefly from Senn, *Principles of Surgery*, page 450. Speaking of tuberculous abscesses, he says: "The effect of the bacillus of tuberculosis on the tissue is to produce a chronic inflammation, which invariably results in the production of granulation-tissue. The embryonic cells furnish, as it were, a wall of protection for the surrounding healthy tissue. The characteristic pathological feature of every tuberculous product consists in the tendency of the cells of which it is composed to undergo early degenerative changes, which are caused by local anemia and the specific chemical action of the ptomaïnes of the tubercle-bacilli, and consists in coagulation-necrosis, caseation, and liquefaction of the cheesy material into an emulsion, which has always been regarded as pus, until recent investigations have shown that it is simply the product of retrograde tissue-metamorphosis, and not true pus. I believe that it can now be considered as a settled fact that the bacillus of tuberculosis is not a pyogenic microbe, and that in the absence of other microbes it produces a specific form of inflammation which invariably terminates in the production of granulation tissue, and that when true suppuration takes place in the tuberculous product it occurs in consequence of secondary infection with pus-microbes."

Accepting the pathology as given, the treatment of the abscesses of Pott's disease seems to me more simple than some would have us believe. If the abscesses could be opened, thoroughly cleansed, all tuberculous material removed, any bone-detritus washed away, with no infection of the external tissues, and with perfect asepsis, then those who advocate opening every abscess would clearly have established their point; on the other hand, could it be shown that no trouble followed from extreme conservatism, then there would be no necessity for operative procedures. But whilst some cases do well, and the abscess seems in no way to influence the final result, others do badly, and the abscess is undoubtedly the cause of the patient's death. The explanation of these various conditions seems to me to be largely due to the question of infection by the pus microbes. As long as the tuberculous or cold abscess remains purely such, but little inconvenience may result to the patient and the symptoms are insignificant; but let a mixed or a secondary infection occur, and all is changed; a condition of sepsis is added to one of tuberculosis. If the abscess has never been opened, it is noticed that the child is doing poorly, septic symptoms appear, the temperature is characteristic or at least suggestive, more severe symptoms may follow, and, if nothing is done, death ensues; but let such a case be treated scientifically: remove or do away with the source of infection, secure proper drainage, and improvement will at once be noted. The secondary infection may not occur until some time after the abscess has been opened, or it may occur at the time of opening, and it is the danger and the great frequency of this occurrence that deters us from opening these cold abscesses. We know that despite all possible precautions, and with every endeavor to be strictly and surgically aseptic, the cases become infected, and may die as a result of this infection. If the septic trouble be mild in character it is usually recovered from, but we must remember that the patient is already suffering from tuberculosis, and the conditions are not as favorable as they would otherwise be.

Caseation and absorption of the liquid contents of the abscess are a more frequent result, I believe, than is generally supposed, and this may often be aided by means of aspiration, which, of course, is done with every antiseptic precaution. The operation is often very disappointing, owing to the fact that the needle soon becomes clogged and the abscess is but very imperfectly evacuated. This difficulty can be partly overcome by using a large-sized needle, through which, if the suction-force is good, large pieces of cheesy material may be removed; and a simple expedient that I have found of value when such clogging does occur is to force through your aspiratory needle a small amount of a weak carbolic solution, thus washing back into the cavity the obstructing plug, then, changing the position of the needle, to begin aspirating again. Introduce the needle at some little distance from the abscess, so that considerable tissue intervenes between the opening and the external air. It is advisable to make the openings also at dependent points, so that if the abscess should eventually open along the track of the needle the drainage will be of the best. If possible, after the evacuation of the abscess, whether or not any fluids, such as iodoform and glycerin, or hydrogen peroxide, etc., have been injected, make pressure either by a pad and bandage, or by straps of adhesive plaster. This prevents hemorrhage from the sac-walls, and promotes absorption. Very little has been done with the injection of fluids into the abscess-cavity after evacuation in the cases here analyzed, as the results by the other method were so good. The iodoform-emulsions suggested by Bruns and Krause, seem, however, worthy of trial.

In all cases, no matter at what stage of the disease, efficient protection should be given the spine, either by plaster, paper, wooden or wire jackets, or corsets, or by some of the numerous forms of braces. This protection, combined with proper general care of the patient, will in many cases cause a disappearance of the abscess, and all that remains is a small nodule,

without fluctuation, and causing no symptoms. If the abscess is increasing rapidly in size, or is producing pressure-symptoms, aspirate, and this should be continued at intervals if the patient is doing well. If the patient is doing poorly, and symptoms indicate that this is due to the abscess, endeavor to remove the cause; open, clean out thoroughly, scrape the abscess-cavity, and, if possible, the sinus leading to the diseased bone, and also the diseased bone itself. Secure good drainage, and keep your wound aseptic, if possible. Of the many cases of abscess in the pelvis but few can be properly drained by one opening, and I believe it best to open through and through so that, standing or lying down, the drainage is always good.

Whether the cheesy mass left behind after non-operative treatment or after aspiration may cause future trouble, is a matter that is not clearly established, although we might reasonably suppose that in some cases it does.

There are also a certain number of cases in which aspiration or incision might be indicated to prevent the abscess bursting into some viscus, but none have occurred among those analyzed in this paper. The most frequent indications for opening the abscess in non-infected cases that are doing well are that they interfere with the proper application of a brace or, by their size, are impediments to locomotion. The psoas abscesses, if accompanied by much contraction of psoas and iliacus muscles, cause marked lameness, which disappears when the abscess is removed. Another reason for aspiration or incision is that, by burrowing, the abscess may enter another joint and cause further trouble.

ANALYSIS OF 75 CASES OF ABSCESSES OF POTT'S DISEASE.

No treatment but brace;	abscess disappeared	3
" " "	abscess *in statu quo*	8
" " "	abscess increasing, child doing well	8
" " "	child not doing well	2
		21

Aspirations.

Abscess disappeared	11	
Abscess opened spontaneously after aspiration failed	3	
Abscess incised after aspiration failed	4	
Abscess *in statu quo* after aspiration failed	1	
		19

No. of aspirations in each case from 2 to 6, average 3

Incisions—Scraping Sac.

With use of iodoform-emulsion or peroxide of hydrogen		14
Results—Good	11	
Bad	3	
Infected at time of operation or at subsequent dressings	11	
Not infected	3	

Opened Spontaneously.

Results—Good	15	
Bad	6	
		21
		75

Deaths.

Tuberculous meningitis	2
Amyloid liver	2
Suppression of urine	1
	5

A study of the preceding analysis will show us that the cases that have been treated on the expectant plan and by aspiration have done remarkably well, and we believe this plan should be followed whenever possible. The two deaths from meningitis occurred in cases that had been aspirated, the two from amyloid liver in cases that had opened spontaneously, and the death from suppression of urine occurred in a child thirty-six hours after opening a psoas abscess in front and behind and inserting a drainage-tube. These results are immediate rather than final, and it must be clearly understood that they do not represent the true death-rate of Pott's disease complicated by abscesses. The death-rate after incision is also larger in adults than in children.

THE FUNDAMENTAL PRINCIPLES OF ANATOMICAL NOMENCLATURE.[1]

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THE late honored President of the Association of American Anatomists,[2] in the preface to the second edition of his treatise on *Human Anatomy*, published less than three years ago, wrote as follows:

"As a rule, one name for an organ or part is used, and that one selected which is simplest and most expressive of its character.

"The name also, so far as may be permitted, is rendered into English.

"Many phrases in common use as names have been curtailed of what have appeared unnecessary portions, and sometimes the adjective portion of the phrase has been retained in preference to the substantive portion, where, for various reasons, it has seemed more appropriate.

"Where names of persons are applied to parts, they are generally avoided, and others, in all respects better adapted to the purpose, are used.

"A radical change would confuse, rather than facilitate, the study of anatomy."

It is not easy to determine what quality of this announcement is most impressive: the brevity and simplicity with which a complex subject is stated; the judicial and impersonal attitude respecting what too easily lends itself to controversy; the moral courage displayed by one naturally conservative and no longer young in adopting certain new "tools of thought"

[1] Read at the meeting of the Association of American Anatomists, held in Washington, September, 1891.

[2] Professor Joseph Leidy, M.D., LL.D.

in place of some that he had used and taught others to use for more than a quarter of a century; or, finally, the practical wisdom that led him to deprecate, as both needless and harmful, any sweeping re-designation of anatomical parts.

The following selections from the names used by Dr. Leidy for parts of the brain may illustrate the nature and extent of the modifications sanctioned by him, and serve as the basis for a brief further consideration of the more important principles involved:

Callosum for "corpus callosum," or "trabs cerebri."

Central fissure for "fissure of Rolando."

Chiasm for "chiasma opticum," or "chiasma nervorum opticorum."

Dura for "dura mater."

Fimbria for "corpus fimbriatum," or "tænia hippocampi."

Hippocampus for "hippocampus major," or "cornu Ammonis."

Oblongata for "medulla oblongata."

Pons for "pons Varolii."

Thalamus for "thalamus opticus," or "thalamus nervorum opticorum."

The parts designated are among those most frequently mentioned in discussing the anatomy of the brain; with them, therefore, is there most need of terminological simplification.

In one sense they are new names, but in another and more important sense they are merely familiar terms in a more convenient form.

Most of them are sufficiently appropriate etymologically, *e. g.*, *chiasm*, *fimbria*, *pons*. Some may not be superior in themselves, but are so linked with the accepted names of other parts as to have an indirect claim to perpetuity; from *hippocampus* was named the hippocampal fissure; the physiologically-interesting paracentral lobule was so called from its topographical relation to the central fissure; the great cerebral commissure might be more fitly indicated by *trabs*, a beam, than by *callosum;* but the latter word is, as it were, embalmed in *callosal* and its several compounds.

The words are euphonious, easily pronounced, and of moderate length—none over four syllables; as mere verbal forms, therefore, they are acceptable.

The words are all Latin in form, or at least in immediate derivation. Hence no national jealousies can arise, and hence, also, the name may be adopted into any modern language by the well-established methods that have been enumerated in some detail by the writer.[1]

For example, the Latin *fissura* becomes *fessura* in Italian, *fissure* in English and French (the two distinguished by pronunciation, though not in spelling), and *Fissur* in German. Each of these is a paronym of the original Latin, and from each may be formed the appropriate adjective.

From the substantives adjectives are regularly derived; *fimbrial*, *hippocampal*, and *thalamic* are beyond question; there may be room for choice between *chiasmal* and *chiasmatic*, according as one is governed by practical or classical considerations; the adjective from pons is certainly *pontile*, rather than *pontal* or *pontine*.

Callosum, *dura*, *pia*, and *oblongata* are already Latin adjectives, but that is no obstacle to the formation of secondary adjectives from them. *Callosal*, indeed, is one of the commonest of encephalic terms; *dural* and *pial* are not infrequent, and *oblongatal* has been employed.[1]

With the exception of *central fissure*, all are mononyms, or single-word terms; there is but one compound, *hippocampus*, and there are no pseudo-mononyms, verbal tandems, so to speak, such as the Germans produce by stringing together an indefinite number of single words.

The two-word term, or dionym, *central fissure*, is an example of a large number of names of parts that constitute natural groups or series. The atlas and axis have special names, but most of the vertebræ, like the ribs, are merely numbered; among the arteries, the aorta only has a mononym; among the gyri or convolutions, the cuneus, precuneus, and operculum are so distinguished; all the fissures have double names, comparable with the generic and specific names of animals and plants.

But, as with *central fissure*, the distinctive part of the name is often a single word, a mononymic adjective, and most of the other fissures and gyri may be so provided by simple verbal combinations.[2]

It will be noted that, among the terms selected from Dr. Leidy's work, only two are distinctly English rather than Latin in form, viz., *chiasm* and *central fissure*; these are the Anglo-paronyms of

[1] "Paronymy *versus* Heteronymy as Neuronymic Principles," Journal of Nervous and Mental Diseases, xii, 1885; "Anatomical Terminology," Reference Handbook of the Medical Sciences, viii, 1889.

[1] In the descriptions of the structure and functions of the two kinds of nervous tissue given in the larger treatises on Physiology, *e. g.*, that of Foster, how much space would be saved and how much wearisome repetition avoided were *alba* and *cinerea* to replace *white matter* and *gray matter*, and *albal* and *dural* the phrases commonly employed.

[2] In 1885 (*New York Medical Journal*, November 25th), the writer proposed that the commonly-accepted names for the encephalic arteries should be mononymized by replacing adjectives indicative of relative position by prefixes having the same signification; thus, *posterior cerebral* became *postcerebral*, etc. In his article, "Vessels of the Brain," in the Reference Handbook of the Medical Sciences, viii, Dr. William Browning has not only adopted these simplified names, but has applied the system to the veins and sinuses of the brain.

chiasma and *fissura centralis;* the others, as *spelled*, are either Latin or English. If intended to be regarded as Latin, then in an English page they should be italicized; but as English words they would be pronounced as such and be regarded as unchanged paronyms.

The change of Latin words by paronymy is what Dr. Leidy meant when he said that the names are "rendered into English." But there is another mode of rendering, namely, by translating into the vernacular; this would have given *bed* for *thalamus*, *bridge* for *pons*, *hard mass* for *callosum*, and *middle cleft* for *fissura centralis*. These heteronyms may be more or less acceptable as mere words, but they do not readily submit to the formation of adjectives; they rarely suggest the Latin equivalent, and are apt to be wholly unlike the corresponding vernacular terms in other languages. Heteronyms are incongruous and dissociating; paronyms are homogeneous and constitute substantial steps toward the realization of a universal scientific language.

Dr. Leidy's use of *fimbria* in place of *corpus fimbriatum* demands special comment, because it represents a group of cases in which the reduction of the polyonym to the mononym involves two distinct stages: first, the dropping of the superfluous *corpus*, leaving the neuter adjective to be used substantively, like *callosum*, *caudatum*, etc; secondly, the abandonment of the adjective in favor of the noun, *fimbria*, from which it was derived; this not only gives a shorter word, but warrants the shorter adjective, *fimbrial*. The principle is a well-established form of metaphor; it is as if a man with a lion-like head were called first *homo leontiformis*, then *leontiformis*, and finally simply *leo*, the context preventing confusion of meaning. Similarly there is no reason why *corpus lenticulare* should not become successively *lenticulare* and *lenticula; corpus restiforme*, *restiforme*, and then *restis*.

It will be remembered that Dr. Leidy's method of reducing polyonyms to mononyms was, to use his own language, by omitting superfluous words; the numerous terms beginning with *corpus* were thus lightened, literally disembodied, leaving only the spirit, the essential part. But he was not apparently prepared to convert into mononyms the very considerable number of polyonyms containing adjectives indicative of relative position, by replacing the adjectives with prefixes having the same meaning. Yet the general use of analogous compounds, for example, *prefrontal* and *postfrontal* for *anterior* and *posterior frontal*, and of *prencephalon* and *mesencephalon* for *anterior* and *middle-brain segment*, encourages the belief that in time, when the advantages of mononyms are more generally and fully recognized, there will be adopted not only Owen's *precava* and *postcava* in place of the ponderous *vena cava anterior* and *posterior*, or *ascending* and *descending vena cava*, but also many analogous names of groups of associated parts, *e. g.*, *precommissure*, *postcommissure*, *medicommissure; precornu*, *postcornu*, and *medicornu*. As Latin mononyms, all these and similar terms, while retaining the full and unmistakable significance of the original polyonyms—*commissura posterior*, etc., would gain the capacity for adjective inflection and for transportation into all modern languages without material change of form.

In brief, while honoring our anatomical predecessors by carefully regarding the terms they have transmitted to us, we should, with him who has so recently left us, bear in mind that the advancement and dissemination of our chosen science demands a simplification of its language, and we should accomplish this end, so far as practicable, by *the selection or formation of Latin mononyms, from which each nation may form the appropriate paronyms.*

Whatever principles or set of names we may adopt, there is a point of *practice*, respecting which the precept and example of Dr. Leidy are surely worthy of universal acceptance and imitation, viz., to use *only one name for an organ or part*, all others being synonyms. Even the accomplished anatomist is apt to be delayed by encountering two, three, or more names for one and the same part in different passages of the same book or article, while to the beginner it is simply bewildering. As long ago as 1885 Dr. Leidy had prepared lists of the names he thought of using in the new edition of his *Anatomy*, and the changes in detail did not prevent the maintenance of a terminological consistency which was nearly without precedent.

CLINICAL MEMORANDA.

REPORT OF A CASE OF ECTOPIC PREGNANCY.[1]

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MRS. A. E. P., twenty-four years old on November 5, 1890, was born in the State of New York. She menstruated first at the age of fifteen; was always regular, but suffered from dysmenorrhea until after the birth of her first child. She was married at the age of seventeen and a half years; has three children, the oldest five, the second nineteen months younger, and the youngest was one year old last December. She has had no miscarriages. Menstruation appeared regularly two months after the birth of the first child, but it was two years after the birth of the second child before its reappearance. The third child was one year old on the 16th of last December, and menstruation occurred for the first time on the 28th of that month, lasting three days, but being more pro-

[1] Read at the meeting of the Central New York Medical Association, held at Buffalo, N. Y., June 2, 1891.

fuse than normal. It appeared again on January 28th, the flow being normal. On February 28th she had a slight discharge which she thought was menstrual. While carrying the last child, after about the fourth or fifth month she had pain in the left iliac region, which was worse after the birth of the child, varying in intensity, but never entirely absent. About the 18th of last February she had the "grippe," the pains extending all over her body, but being more severe in the left side. She kept in bed for a week, after which she felt quite well, the pain in the left iliac region having nearly disappeared. Other than as already mentioned the patient never had any illness. Early in the morning of March 1st she walked one mile to assist at a confinement, being in her usual health. About 3.30 P.M. she was suddenly seized with severe pain in the left side, and fell to the floor, losing consciousness for a short time. When she recovered consciousness she felt very weak and faint, and suffered from severe pains in the abdomen, especially in the left iliac region. She described the pain in the abdomen as "terrible cramps." About an hour later she felt as though her bowels would move, and, when placed on the vessel, there was a slight movement. She fainted again, but soon rallied after being placed in bed. The desire to go to stool still remained, and vomiting occurred several times.

Dr. H. C. Buswell saw the patient one and a half hours after the attack, and found her as described, with a a very rapid, feeble pulse, and unable to raise her head. She was in a state of almost complete collapse. Dr. Buswell raised the foot of the bed, and used other restorative remedies. Vaginal examination revealed a soft, boggy mass, very tender to the touch, at the left and posterior to the uterus. There was also a slightly bloody discharge from the uterus. The diagnosis made by Dr. Buswell was ectopic pregnancy with rupture of the tube. In addition to what had already been done, morphine was administered to relieve the pain, and instructions were given to keep the patient quiet, and under no circumstances to allow her to raise her head.

The next morning she had rallied considerably, and was better in every respect. The same treatment was continued until the fourth day, when I saw the patient for the first time. I found the pulse 110, which was less frequent than it had been; the temperature was 100°. The pain and tenderness were so great that a thorough examination could not be made, yet the boggy mass at the left and posterior to the uterus could be felt. The uterus was two and three-fourths inches in depth.

I confirmed Dr. Buswell's diagnosis, and advised operation; but the husband being away, the patient wished to wait until his return. As she was improving, although slowly, and as the surroundings were the very worst, it was thought advisable to wait, carefully watching the patient, hoping that she might improve sufficiently to be moved to the hospital. She was kept quiet in bed; for two weeks her temperature was from 100° to 101°, the pulse from 100 to 110; abdominal tenderness was pronounced. At the end of two weeks the temperature was normal or nearly so most of the time, the pulse but little accelerated, yet the abdominal tenderness was quite marked, especially on the left side, and the patient was unable to sit up.

A week later, four weeks after the attack, she was removed to her mother's house, a distance of half a mile. After that she did not feel quite so well, with increased pain and febrile disturbance. For the next few days she was sometimes better, sometimes worse, the abdominal pain and tenderness, especially on the left side, being very pronounced; the pulse was rather frequent, from 85 to 90, but the temperature was nearly normal, though at times slightly raised. About April 7th she felt worse, and began to realize the force of what had been told her, that she could not get well without an operation, and on April 9th she was taken to the Buffalo Hospital of the Sisters of Charity. Up to the time of removal to the hospital I saw the patient only twice, the first time four days after rupture occurred and the next time three or four days later. The facts for the greater part of the foregoing history were furnished by Dr. Buswell, who, in addition to what I had already told the patient, explained the nature of the difficulty to her and urged the operation. But for several reasons, the principal being the absence from home of her husband, consent was not obtained until her removal to the hospital, more than five weeks after the occurrence of the rupture. After her arrival at the hospital she felt better than at any time since the rupture occurred. She was able to sit up and walk about her room and the corridors. Her appetite was good, there was no fever, and the secretions were normal, yet the left iliac region continued very sore and tender.

On April 13th, assisted by Drs. Buswell, Bentler, Colton, and Dowd, I opened the abdominal cavity and found on the left side nearly two quarts of débris, mostly clotted blood, which had the appearance of being about to suppurate. The tube of this side was ruptured in the outer half, the rent being quite large. The tube was ligated close to the uterus, and carefully removed, as was also the blood; some of this, however, was so firmly adherent to the intestines that many little particles were allowed to remain, as it was thought that their presence would produce less disturbance than would their removal. The right ovary was cystic, of the size of a hen's egg, the walls of the cyst being very thin and transparent, the fluid thin and colorless. This cyst ruptured during its removal. The abdominal cavity was carefully cleansed by sponging, but was not washed out, nor was drainage used. Reaction occurred promptly, and the patient did well, except that vomiting was very persistent, and continued fifty hours. She was carefully prepared for the operation, and, except several remedies that are supposed to control vomiting, nothing was afterward given but an occasional swallow of hot water, and later a little beef-tea, until vomiting stopped. In this case, if any medicine controlled the vomiting, it was coca wine. I think, however, that time did as much as, if not more than, all the remedies employed to relieve the vomiting.

The second day at midnight the temperature was 101°, the highest at any time, and the pulse 100. The third day at six o'clock in the evening the temperature was 100°, and the pulse 90. After that both temperature and pulse were nearly normal. The bowels moved on the third day, and every second day afterward. Convalescence was uninterrupted, and three weeks after the operation the patient left the hospital, saying that she felt better than she had in a long time. At this writing, five months after the operation, she feels better than at any time during the past two or three years.

I should state that in this case the fetus was not found, but the placenta was recognized. This is the sixth case that I have seen; five of them were operated on and recovered, and the other died before an operation could be performed.

Some of the points to which especial attention is called are these: This patient had not been sterile for any length of time, neither had she shown "a previous inaptitude for conception." There were none of the usual signs of pregnancy present, the patient not having the least idea that she was in that condition.

The feeling as though the bowels would move, which was present in this case, is said to be characteristic of rupture into the broad ligament of the left side.

Notwithstanding that the whole of both tubes and ovaries were removed, the patient continued to menstruate as regularly as ever and more profusely.

The point of especial interest is the fact that, although the rupture was intra-peritoneal, the patient did not lose her life from hemorrhage. Absorption of the blood and placenta did not take place, and to leave so large a quantity of foreign matter in the abdominal cavity any length of time is no doubt extremely dangerous. It is very fortunate that the only unfavorable consequence was the peritonitis from which the patient suffered.

The only case similar to this of which I have any knowledge is reported by Mr. Tait, in his *Diseases of Women and Abdominal Surgery*, p. 486.

PROLONGED SUBNORMAL TEMPERATURE FOLLOWING THE ADMINISTRATION OF ANTIFEBRIN.

BY F. HORTON, M.D.,
OF NEWCASTLE, WYOMING.

THE great length of time during which the temperature remained subnormal in this case, its sudden rise again, and the small number of similar cases in the literature of the subject afford, I think, sufficient excuse for this report:

On October 4, 1891, I was called to see E. L. R., a railroad laborer, twenty-two years of age. I learned that he had been confined to bed for about two weeks.

He presented the symptoms of a well-marked case of typhoid fever: the bowels were very loose; there was tenderness in the right iliac region; rose-colored spots were present; the appearance of the tongue was characteristic, etc. The pulse was 110; the temperature of the mouth was 104°. The patient's surroundings were most unhygienic. He was lying in a one-windowed room, occupied by at least a dozen men as a sleeping-apartment—the beds and room were dirty.

I prescribed two-grain doses of sulphate of quinine, combined with three grains of salol, in capsule—one to be taken every three hours. Bismuth was also given to check the bowels, and I ordered cold sponge-baths, although it was impossible for the baths to be properly given. On this treatment his condition improved, and on the next day his temperature had fallen to 101° in the morning and 102° in the evening.

From this time on until October 13th the case ran a typical course, the temperature ranging from 101° to 102.5°. On the 13th, his temperature ran up to 103°, and the following day to 104°. Being unable to have the baths properly given, I decided to give antifebrin to lower the temperature. I accordingly prescribed antifebrin grs. iv, camphor pulv. gr. ¼, in capsule—a combination I have often used.

He received a capsule at 10 A.M. on the 14th, another at 3 P.M. I saw him at 6 P.M. and found the temperature 97°, the pulse 90. I ordered the antifebrin discontinued. I saw him at 10 A.M. on the 15th, and found the temperature 95°, the pulse 84; I discontinued all treatment, and gave spiritus frumenti ʒj every hour; hot-water bottles were put to the patient's feet under cover, etc. At this time the extremities were cool, but there was no cyanosis. In the evening his condition remained unchanged. On the 16th the morning temperature was 94.6°, the pulse 80. I saw him at 7 P.M., and the temperature had suddenly jumped up to 104°. I then gave the antifebrin in divided doses—*i. e.*, 2 grains every four hours. On the 17th the temperature was 101°, and on the following day normal. From this time on the man made an uninterrupted recovery.

The most remarkable features of the case to me were: the very low temperature, continuing so long after the drug had been withdrawn—nearly forty-eight hours; the suddenness of the rise from 94.6° at 10 A.M. to 104° at 6 P.M.; its sudden decline again, with no apparent evil result. During the time the temperature was below normal the man did not complain of feeling uncomfortable, but maintained that he felt better than he had for some days, although he would feel chilly if the covers were at all removed.

The temperature was taken under the tongue, and at first I doubted the correctness of my thermometer; but, after procuring another and testing my own, I was forced to the conclusion that the instrument was not at fault.

The case was also seen by my friend, Dr. B. B. Kelly, on the morning of the 16th, and the temperature taken by him was found to correspond with my own record. He gave an unfavorable prognosis. I was somewhat alarmed at first when the temperature dropped below normal, fearing intestinal perforation. But, as no further symptoms of this complication occurred, I was inclined to attribute the depression of temperature to the antifebrin alone, given in the weakened condition of the patient.

AN INSTANCE OF CURIOUSLY MIXED EXANTHEM—MOST LIKELY SCARLATINIFORM.

BY J. MADISON TAYLOR, M.D.,
OF PHILADELPHIA.

THIS case, from an old note-book, seems worthy of a hearing.

A robust boy of nine years had, on the morning before I saw him (November 10th), been apparently in perfect health. At mid-day he came home from school complaining of having "caught cold," and feeling a slight soreness of throat. At night the mother—a very intelligent, observing woman—noted a bright rash extending over almost the entire surface of the body. On the 11th this rash was uniformly distributed over the entire surface—a vivid, dusky red. The skin felt hot, stinging, and much roughened by plainly visible papules. These papules were especially prominent upon the forehead, about the ears and the edges of their conchas, and on the neck. The pharynx was irregularly punctate and dusky.

On each of the tonsils was a dirty-yellow ulcer, just about the size and shape of a small watermelon-seed. The tongue was perfectly clean and moist, remaining so throughout the attack. The conjunctivæ were clear and free from injection. The bowels were said to act regularly and sufficiently. The urine for a day or so had been less than normal and of higher color, though voided with increased frequency.

Now, this boy had thrice before had measles, through two attacks of which I had myself guided him. He was a robust little chap of excellent Alsatian ancestry. Scarlatina he had not had. There were symptoms of an acute coryza, with slight cough. The fever was quite active (I do not recall the figures); there was also a full, bounding pulse, but undisturbed breathing. Next day the lad seemed very well, had slept well, called lustily for stouter food, and emphatically proposed going out to play. The fever had lessened markedly, the urine had increased and become of better color. The throat was almost well. Each of the papules already noted had become a tiny vesicle, and the dusky blush, though still uniform, was of a paler tint, with purplish tones. The eyes now seemed injected, and distinct complaint was made of sensitiveness to light.

The next day but one I saw the lad again. The fever had quite gone, the cough was more pronouncedly bronchitic, the eyes were no longer red, the throat was quite healed. Another day passed without my seeing the patient, and on the 16th, lo! the whole surface of the body was now fully desquamating in huge plates. Certain fingers threw off complete glove-like casts. There remained only this and a slight cough, so the family (prudent folk!) announced that my attendance was no longer needed. I saw the boy only once more, some days later, still confined to his room. There was but a patch here and there of half-detached scales on the abdomen, the toes and fingers being immaculately clean. I suspiciously searched the urine for albumin, but found none.

Undoubtedly scarlatina often shows itself as a papular eruption. It rarely exhibits the nasal and conjunctival catarrh so characteristic of measles. But the most curious feature of this case was the punctation of the pharynx—one of the most important premonitory signs of rubeola, the clean tongue, and the very early and complete desquamation.

INFLUENZA FOLLOWED BY PYEMIA.

BY WM. S. BARKER, M.D.,
FORMERLY ASSISTANT PHYSICIAN AT THE ST. LOUIS CITY HOSPITAL, ST. LOUIS, MO.

G. T., nineteen years of age, a laborer, entered the St. Louis City Hospital November 27, 1890. He had had a chill six days before, with pain in his throat and some coryza. With the persistence of the throat pain a general feeling of feverishness had prevailed. When he entered the hospital a huskiness of voice amounting almost to complete aphonia was marked, and slight delirium existed. The temperature was 104°, but was easily reduced by the ordinary antipyretics. There was a slight trace of albumin in the urine.

On laryngoscopic examination intense redness of the posterior wall of the pharynx extending to the adjacent parts of the larynx was detected. There was but little edema of the mucous membranes, and nothing like a diphtheritic exudation could be found in the upper air-passages. The patient complained of general muscular pains and fatigue, quite common in one type of influenza. No visceral lesions could be found. The case seemed to be one of severe influenza, which was somewhat epidemic at the time. The violence of the attack was first concentrated upon the mucous membrane of the pharynx and larynx, but the peculiarity of the case lay in the pyemic involvement of other and distant parts that very soon occurred. The patient's pharynx, mouth, and nasal passages were frequently syringed with hydrogen peroxide, followed by the use of a modified Dobell's solution.

On November 28th, a rather large, flat bleb was first noticed on the palm of the right hand. The contents of this blister seemed at first to be serum, not pronouncedly purulent, though it rapidly became so, and incision two days later evacuated considerable purulent matter. Other similar lesions were soon noticed in various parts, principally on the back and sides of the neck and on the buttocks. These were about the size of a split pea, and usually somewhat enlarged as they became purulent. The severe throat-affection had now moderated and the voice was partially restored. Frequent incisions were made into the lesions described, and when considerable pus could be thus removed the patient's condition seemed slightly improved. The case thus became largely a surgical one. After the incisions general antiseptic measures were employed. It became necessary to make almost daily incisions, as new lesions were constantly making their appearance. An abscess (evidently metastatic) of some depth formed in the left popliteal space. For a week or two in January the patient seemed to hold his own. His condition, however, week by week, became steadily more aggravated. A little later obstinate diarrhea set in—emaciation advanced rapidly, and death took place on January 30th.

The contents of the pustules, examined before death, were characterized by the presence of large numbers of streptococci and staphylococci. The case seemed plainly one of pyemia following influenza.

BISMUTH SUBNITRATE AS A DRESSING FOR THE UMBILICAL CORD.

BY GEORGE A. STUART, M.D.,
OF WAHU, CHINA.

FOR several years I have used bismuth subnitrate as a dressing for the umbilical cord in the newborn. The method of application is as follows: Cut a piece of lint sufficiently large to fold over and prevent the bismuth from being dispersed. Through this a hole is made small enough to fit tightly about the cord and prevent dispersion at that point. The abdomen about the cord is dusted with the bismuth, the cord is passed through the hole in the lint, and the lint pushed well down upon the abdomen. Bismuth enough to completely bury the cord is applied, the lint is folded over smoothly, and the binder applied. The advantages I claim for this mode over all others are the following:

1. Convenience. It has to be applied only once, as

the cord immediately dries up, and does not need to be disturbed until it has dropped off.

2. Cleanliness. There is absolutely no odor, and the addition, at the time of the bath, of a little bismuth to places showing evidences of moisture will keep everything dry and sweet.

3. Safety. Mothers and nurses are not meddling with the dressing, since everything goes on so satisfactorily. There is left no sloughing, discharging stump to corrode the surrounding tissues and bring on hemorrhage or predispose to hernia.

4. The cord drops off sooner than by any other method. For small cords, three days; for large ones, five—rarely exceeding six—constitute the usual time.

5. A better and firmer cicatrix is left than by any other method known to me.

Since I have been using the bismuth dressing I have had no accidents, and 100 per cent. of good results. Much depends upon the manner of dressing, and I have therefore somewhat minutely described its application.

MEDICAL PROGRESS.

External Perineal Urethrotomy.—At a meeting of the Tri-State Medical Association of Mississippi, Arkansas, and Texas, ROGERS presented a report of forty-one cases of external perineal urethrotomy performed on account of the presence of foreign bodies in the bladder and urethra, cystitis, enlarged prostate, stricture of the membranous urethra, and traumatic rupture of the urethra. Death took place in five cases. In two it was due to sepsis from preëxisting gangrene; three cases died from exhaustion. In no instance was death, directly or remotely, attributable to the operation. Five operations were performed without a guide. One case remained unimproved. In each of two cases it was necessary to leave a permanent fistula. In one other a small fistula remained, and this promised to close. When the operation was performed for uncomplicated stricture in the membranous urethra neither rigors nor reactionary fever followed, but in several instances in which these symptoms were present they disappeared immediately after the operation. In the after-treatment rigors and fever occasionally occurred at the first introduction of the sound. The chief reliance in the control of rigor and fever was placed upon morphine administered hypodermatically.

In two cases there was quite troublesome hemorrhage, occurring two and a half and seven days respectively after the operation. The bleeding, however, did not in either case come from the perineal structures, but from the bulbous urethra, where in each case urethrotomy had been performed.

In no case did pelvic cellulitis or septic symptoms follow the operation; but on the contrary the operation relieved the cellulitis when it existed, and in several instances prevented the occurrence of septic symptoms.

The Non-specificity of the Streptococcus of Erysipelas.—At a recent meeting of the Hamburg Society of Physicians, FRAENKEL (*Deutsche medicin. Wochenschr.*, No. 44, 1891) reported that from the pus contained in abscesses that had developed in the course of an attack of erysipelas he had been able to cultivate an organism that corresponded to the streptococcus of erysipelas. He had also observed a case in which the development of facial erysipelas was ascribed to infection from a felon, in the pus of which streptococci were found. In a case of extensive facial erysipelas there was also suppuration of the subcutaneous tissues of the greatly swollen eyelids, and of the inter-muscular and intramuscular tissues of the neck. In the pus and in the edematous fluid streptococci were found, microscopically and by culture. These observations were in harmony with the experimental results already obtained by Fraenkel, from which it appeared that the streptococcus, in accordance with the conditions of infection, at one time occasioned lymphangitis or a phlegmon, at another erysipelas or peritonitis. He had succeeded in inducing erysipelas by injections of streptococci pyogenes into the ears of rabbits; and he had also occasioned suppuration and peritonitis by inoculation of erysipelas-cultures. Nor were the results confined to one species of animal. Thus, some white mice failed to react to intraperitoneal injections of cultures, while others died of peritonitis in twenty-four hours.

"Pental," a New Anesthetic.—MERING, the discoverer of amylene hydrate, has succeeded in producing from the amylene radical an anesthetic, to which, from its containing five carbon-atoms, $(CH_3)_2CCHCH_3$, he has given the name pental. In its volatility and inflammability the product resembles ether; it is used in the same manner as is chloroform. In one hundred instances in which pental was employed the average quantity required in each case was three drams, the anesthesia developing in from three to four minutes. The narcosis is not profound, and is only available for minor surgery. As a rule, operations may be performed before consciousness is completely lost. The advantages of pental consist in the absence of immediate or remote unpleasant effects: it does not cause headache or vomiting; it does not disturb the respiration or the action of the heart, and the stage of anesthesia is not preceded by a stage of excitement even in alcoholic subjects. — *Allg. med. C.-Ztg.* (*Münchener medicin. Wochenschr.*, No. 41, 1891, p. 735.)

The Salts of Strontium in Albuminuria.—At a meeting of the French Society of Therapeutics, DUJARDIN-BEAUMETZ (*Le Progrès Médical*, No. 44, 1891, p. 313) reported that by the employment of strontium lactate he had succeeded in reducing one-half the proportion of albumin in the urine in a number of cases of albuminuria. He ascribed the good results to a favorable influence exerted by the medicament upon the digestion. The drug must be pure; ninety grains may be administered in the course of twenty-four hours.

Ectopia Testis.—POLLAK (*Prager medicin. Wochenschr.*, No. 41, 1891) has reported two cases, one in a lad of thirteen years and the other in an infant of three months, in which temporary displacement of one or both testicles was attended with derangement of micturition, and with pain at remote parts of the body. In both cases restoration of the displaced organs was followed by disappearance of the symptoms.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 19, 1891.

THE WHISKEY TRUST VERSUS THE LIVE STOCK COMMISSIONERS.

THE Live Stock Commissioners of Illinois have made themselves obnoxious to the Whiskey Trust by their efforts to prevent the sale of diseased cattle intended for the beef market in Chicago. Accordingly, the Trust brought suit against the Commissioners, in Peoria, which has ended in a disagreement of the jury. It would be made to appear that the farmers would suffer great loss and that the cattle-trade would be injured if the Commissioners were allowed to condemn beef cattle suffering from the communicable disease known as actinomycosis, or "lump-jaw." This is the same disease that was recently detected in a number of cattle in the Philadelphia stock-yards, and for which the cattle were condemned, while the dealers were bound over to answer at court for selling diseased meat. This anxious solicitude for the farmers would appear inexplicable were it not for the fact that the Whiskey Trust owns great sheds connected with its distilleries, where cattle are fattened on distillery waste for the beef market.

It is a matter of common report that the government inspectors at Montreal not very long ago condemned a considerable number of cattle suffering from actinomycosis, which had been sent to that city from distillery sheds in this country for exportation. It may or it may not be true, but it is reported that this disease is not at all uncommon among cattle in distillery stables. Whether the mode of fattening beef cattle on distillery grains renders them susceptible to this and other diseases we are not prepared to say, but the subject is of sufficient importance to call for a thorough investigation by the Bureau of Animal Industry.

It seems to be a short-sighted policy on the part of the Whiskey Trust and their allies to arraign the Live Stock Commissioners for carrying out measures designed for the protection of the public health, and which, if well performed, tend to relax the restrictions against the sale of Chicago dressed beef in other markets, and thereby broaden the trade.

The willingness of the slaughterers and shippers in Chicago, heretofore publicly announced, to submit to the most rigid and searching inspection and the appointment of State Commissioners to investigate the cattle industry, with the object of eliminating all diseased or suspicious stock, has done much to satisfy the people as to the quality of their cattle and beef. Remove these restrictions, and public confidence is shaken. The enforced sanitary inspection of the great stock-yards and slaughter-houses of Chicago is of more than local importance, and the people of a large section of the country will watch with keenest interest the outcome of the mercenary effort that is being made to baffle the authorities in their attempts to enforce the law directed against a most pernicious practice.

"ETHICS BORN OF UNWORTHY GREED."

AN article with the foregoing title, first appearing in the *Chicago Tribune*, as if from a New York correspondent, has been somewhat extensively copied in other newspapers. It illustrates again the common ruse of charging one's opponent with the identical sin of one's own heart. Controversy is thus befogged, and responsibility shifted. It is a well-known psychological habit of a certain class of minds, when they feel the stings of conscience, to cry, Devil, Devil!

The article in question, with interlarding of much personal vituperation of THE NEWS, repeats with monotonous iteration that THE MEDICAL NEWS, or its editor, in ridiculing the KEELEY cure, writes not with the thought of "the possible good of the

people, but for the mercenary benefit of himself, the motive being a monetary one."

Oh, no! The "mercenary benefit" would follow the purchase from KEELEY, for some $40,000, of a limited territory wherein to practise Keeleyism.

After commending as wise our remark as to the heinousness of advertising a remedy whilst keeping it secret and making a fortune out of the secret, this "correspondent," with characteristic inconsistency, says:

"No profession of gentlemen can turn heaven and earth simply as a charity act, but each and severally they desire to learn the working formula used at Dwight, not for the possible patient or the brother professional, but for the almighty dollar which they believe to be in it for themselves. The repeated attacks, charges of being mercenary, of being inhuman, etc., support the thought that Dr. Keeley will sooner or later seek refuge from this constant persecution by making his secret generally known. To those knowing Dr. Keeley this would be a very fallacious hope. Dr. Keeley will retain his formula into a great futurity before trusting it in the hands of his persecutors."

The advertisement—for such it plainly is (note again how the quack controls, and even fools the newspaper!)—is signed T. B. TANNER, M.D., but the *Medical and Surgical Directory of the United States* contains no such name, neither does the *Medical Register of New York*, nor the *New York City General Directory*.

MESSRS. KEELEY, TANNER & CO. (*unlimited*) may rest assured that the medical profession has not the least desire to know their version of the formula. The essential ingredients of it have been well known since science has studied the history of human delusions and gullibility. The formula, with change of menstruum, was handed down from the medicine men of the most savage tribes of primitive times; APOLLONIUS TYANÆUS, CAGLIOSTRO, HAHNEMANN, and MADAME BLAVATSKY, learned it by heart; all the "seers" and "healers," all the priests and priestesses of modern medical spiritism, faith-cure, astrology, etc. etc.; all advertising physicians; every patent-medicine man, every mountebank of the street-corners, knows all about it. It may be called bichloride of gold, compound oxygen, wizard oil, hoodoo, or *similia similibus*—it is all one!

THE MORALS AND AMENITIES OF MEDICAL CONTROVERSY.

THE *Hahnemannian* for December notifies its contributors and readers that "the editors are responsible for the maintenance of the dignity and courtesy of the journal, and that no discourteous communications will be recognized."

The same issue contains an editorial article wherein, in less than a page, the following are only a portion of the epithets, charges, and comparisons applied to the editor of THE MEDICAL NEWS: "This freak;" "A tallow candle going out with a bad smell;" "Virulence;" "Bigotry;" "Mendacity;" "Blackguardism;" "Mud of bigotry;" "Childish effusion;" "Dr. Jekyll and Mr. Hyde;" "Chameleon;" "Fawning;" "Nightmare;" "Horror;" "Dreams and hints of cut-off salary;" "Squirming;" "Wriggling;" "Crawls;" "Cries Wolf;" "Don Quixote;" "Brave(?) knight;" "Fear of a loss of sustenance;" "Gnashes his teeth;" "Cringingly begs for mercy;" "Sneakingly slurs;" "Not truthful;" "Not honest;" etc.

These gentle courtesies and samples of matchless irony are brought to an end thus: "For the sake of medical journalism, for the sake of an art and science too noble to be dragged in the mud of bigotry, self-interest, mendacity, and blackguardism, may this candle indeed go out, and forever!"

It is worthy of attention that the literary taste displayed by the editor in this exquisite illustration of his "notice" (to readers concerning editorial responsibility for dignity and courtesy) quite overtops the ethics and urbanity there exemplified. One smiles and wonders, for example, how "the little end of the horn" can "go out with a bad smell;" in what manner a "pen" can be "newly-hatched;" if the changes of the "chameleon" and of "Dr. Jekyll" are comparable; how "a bad smell" can be "forgiven," or how it can "rest in peace;" if, really, "Don Quixote" ever cried "Wolf;" how the "highest rank of initial [why *initial?*] virulence and bigotry" can also be "a childish effusion," etc. etc.

For the better understanding of any that may read these lines, and who have not seen the previous issues of THE NEWS in which homeopathic affairs have briefly and rarely been alluded to, it may be well to say that in these columns personalities have had no place. The tenets, theories, and practice of so-called Hahnemannian medicine have been discussed, but without reference to individual practitioners or editors. We have not the faintest spark of personal feeling in the matter.

Such things would not be worth notice did they not among others strikingly illustrate how pauper-

ism of argument and reason, since Euripides at least, flies to passion, objurgation, and personal abuse to hide from itself (again to quote the courteous editor of *The Hahnemannian*) its "trying position" and "sorry plight." One could not wish for an opposing counsel more to his liking. No answer is required, because the plea is quashed and *nolo contendere* ludicrously admitted by hysterics and incoherence. But the cause that is trusted to such advocates must, indeed, be weak and foredoomed.

Ὅταν δὲ δαίμων ἀνδρὶ πορσύνῃ κακά,
Τὸν νοῦν ἔβλαψε πρῶτον.

THE PRIEST-PHYSICIAN OF BAVARIA.

An interesting and instructive monograph has been published by "Sebastien Kneipp, Parish Priest of Wörishofen, Bavaria," on his method of healing disease and preserving health. It would seem that the "water-cure" has had considerable vogue, since the worthy Pfarrer himself describes the visit of Baron Rothschild to the little Bavarian village, travelling in his private car, with cook, secretary, and servants. The Baron took the medicine without flinching, the principal prescription apparently being a daily evening promenade ("to the wondering admiration of the gaping crowd"), bareheaded and barefooted, in a meadow near the railway station. This walking barefoot in the wet grass or snow is an important part of the "system," of which other parts consist in bathing with the clothing not removed, or without drying the body after a bath, the clothing put on the wet body at once, etc. Cold-water baths and mineral-water baths are emphatically condemned. Simple medicinal preparations are used, but it is evident that the chief reliance is placed on the influence of the imagination and the arousing of the will. Evidence of this is seen in the description of the priest's personal appearance:

"A white-haired old man of imposing figure, tall and commanding, and with a powerful face, to which specially dark bushy eyebrows give peculiar character. There is something positively majestic about him; the secret of his power lies in the eyes, looking out at one as they do from the shadow of these prominent brows; his eye looks as though it could penetrate the inmost workings of the soul."

The foregoing description reminds one most forcibly of the descriptions of Father Mollinger.

It is a strange fact that most people, more or less unconsciously, have confidence in what a man says if he but speak with sufficient earnestness, and if a powerful will and commanding personal appearance give added weight to the assertion. All medical miracle-mongers and quack advertisers trade upon this characteristic of human nature.

THE PROPORTION OF ALBUMIN IN URINE.

We call attention to a communication in another column of The Medical News, in which the unfortunate practice of designating the quantity of albumin present in urine by the proportionate bulk precipitated by heat is justly criticised. That this procedure is not only crude and unscientific, but in its results absolutely inaccurate, is amply demonstrated by the data presented in the letter of our correspondent. Of course, the only accurate way of determining the quantity of albumin present in urine is by careful volumetric analysis. This, however, the busy practitioner has neither time nor inclination to carry out; nor is it absolutely necessary for ordinary clinical purposes. Approximative estimates here amply suffice.

Our own method has been to have a mental standard in accordance with the density and thickness of the ring developed by the contact-method of overlaying nitric acid with the urine in which the proportion of albumin is to be determined. In our hands the application of heat to the upper half of the column of clear, acid urine in a test-tube has furnished the best results in the qualitative determination of albuminuria. When heat occasions a slight turbidity indicative of the presence of albumin, and the contact-method fails, we speak of a trace. When, however, we are able to detect a ring by the contact-method, we speak of a thirty-second, or a sixteenth, or an eighth, or a quarter, or a half (and so on) per cent., in accordance with the density and thickness of the ring of coagulated albumin. Only approximative, the method answers admirably for comparative observations, and, while not precise, it possesses the virtue of not being grossly inaccurate and of not being a means of conveying false conceptions, both of which restrictions apply to the designation of the proportion of albumin according to the bulk of the precipitate thrown down by heat. It is at least highly desirable that some uniform method of designation should be adopted.

THE U. S. MEDICAL PRACTITIONERS' PROTECTIVE ALLIANCE.

WE are indebted to the *Maryland Medical Journal* for a just word of warning concerning the medical standing of some of the officers of the U. S. Medical Practitioners' Protective Alliance. The objects of the organization, as set forth in the report, constitution, etc., are so excellent that it is a double pity — supposing true the charges as to the advertising practices, etc., of the officers—that a cause so worthy should not have found the most unexceptionable advocates and leaders. It should not be forgotten, however, that lukewarmness or indifference on the part of physicians to the *stated objects* of the Alliance still remain none the less inexcusable.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION OF GENERAL MEDICINE.

Stated Meeting, November 17, 1891.

DR. BEVERLEY ROBINSON read a paper entitled, "Creasote in the Treatment of Pulmonary Phthisis." Dr. Robinson stated that he considered creasote as the most valuable medicinal agent we have at the present time for treating pulmonary tuberculosis. In nearly all cases marked improvement in the symptoms follows its use. The cough is much diminished in frequency and severity; the expectoration is diminished in quantity and changed in quality; the nutrition is improved; the weight is increased; there is augmented strength and activity; costiveness of the bowels is relieved; night-sweats often disappear. Even in the advanced stages of the disease, when cavities are present, the cough is sometimes ameliorated. The temperature is often favorably influenced by the drug. In several instances the bacilli have entirely disappeared from the sputum, as proven by repeated microscopical examinations. In some cases the expectoration stopped entirely. The physical signs in these cases were also improved. The moist râles disappeared, the breathing became less harsh, and the areas of consolidation smaller. In some cases in which cavities were present at the apices, a marked degree of contraction had followed the use of the drug.

There are few contra-indications for the use of creasote and these few can usually be obviated by its careful administration. Occasionally the stomach does not tolerate it. It may produce headache, or abdominal pain. These unpleasant manifestations may be due to a too rapid increase of the dose, or to a personal idiosyncrasy of the patient. They are to be overcome by diminishing the dose or interrupting its use for awhile. If the drug occasions diarrhea, the same rules apply, or an opiate can be added to each dose. As to the effect of the drug on the kidneys, Dr. Robinson said that usually it is not present in the urine, although it is found there occasionally and in some cases he has recognized a passing albuminuria. When large doses of creasote are given the urine should be examined every few days. In cases of already existing renal trouble he has observed no ill effects from the use of the drug. In regard to hemoptysis, it is claimed that creasote in appreciable doses causes congestion of the bronchial mucous membrane and induces hemoptysis. Dr. Robinson said that nothing in his experience corroborates this view. In regard to the drug itself, the best form to use is that obtained from beech-wood. Much of the so-called creasote that is dispensed in the drug-shops is composed of impure carbolic acid. As for the dose, he begins with small quantities, from one-half to one minim three or four times a day, and later on every two or three hours, if the stomach will tolerate it. Gradually carry it up to from twenty to twenty-five drops in twenty-four hours. One of his patients had taken as much as seventy-two drops daily.

Dr. Robinson said that he had never recognized the advantages of the subcutaneous use of the drug, excepting that larger doses may possibly be administered in that way. Frequent and long inhalations of the drug he regards as extremely useful as an adjunct to its internal administration. The inhalations often improve the condition of the larynx and relieve an obstinate cough. His favorite method of inhalation is by means of the perforated zinc inhaler. For the purpose of inhalation the drug must be combined with alcohol, one dram to the ounce, to prevent irritation.

DR. WILLIAM G. THOMPSON stated that his experience with the use of creasote in pulmonary tuberculosis was so thoroughly in accord with that of Dr. Robinson that he had very little to say on the subject. He has been in the habit of selecting beech-wood creasote and prescribing it in emulsion, or in the form of an enteric pill formulated by Dr. William H. Flint. He has also used Dr. Robinson's inhaler. The drug should be pushed to the limit of physiological toleration. He has never observed any toxic symptoms follow the use of the drug, or any increase in the amount of albumin in the urine in cases in which albuminuria already existed. In conclusion he stated that creasote seemed to him to be the most satisfactory and reliable drug that we have for the treatment of ordinary cases of phthisis, especially in the first and second stages.

DR. WILLIAM H. FLINT stated that his attention was first called to the value of creasote as a therapeutic agent in phthisis by Dr. Robinson's admirable article on the subject, published some years ago in the *American Journal of the Medical Sciences*. He has used it uninterruptedly since that time and regarded it with continually increasing favor. He usually administered the drug in the form of a pill, in which form he thought larger quantities could be borne by the stomach.

DR. WEBBER stated that he has used creasote in the treatment of pulmonary tuberculosis since 1888. In one class of patients in whom well-developed bilateral lesions existed, he had failed to notice any improvement follow the use of the drug, and the patients died. In another class of cases, in which the lesion was unilateral, and in which the sputum showed but few bacilli and no spores, marked improvement in the symptoms was

noted. Dr. Webber said he had never gone beyond ten drops of the drug three times a day.

Dr. James P. Tuttle said that, according to his experience, the stomach does not bear creasote well, especially in advanced cases, where there is always more or less weakness in that direction. He has in a number of cases used the rectum as a medium for the administration of the drug, and within an hour after such an injection the odor of creasote can be detected in the patient's breath, and the patient also can taste it, showing that it is exhaled by the lungs. In making these injections he combines the creasote with sterilized oil. In this way he has carried the dose up to sixty minims in twenty-four hours, using pure beechwood creasote. The benefit of this method of administration is that the stomach is not deranged, and tonics can be given at the same time. In one case he was compelled to discontinue the use of the drug on account of a mitral lesion of the heart. With every administration of the drug the patient manifested great depression, extreme rapidity of the pulse, and a sinking condition amounting almost to fainting.

The Chairman (Dr. Francis Delafield) stated that he has used creasote in cases of pulmonary tuberculosis as a matter of routine practice for a number of years. He thought that perhaps he had not used it with sufficient enthusiasm, and that while the drug unquestionably is of service in some cases, the mortality of the disease is still a very considerable one. The good effects he had got were principally as regards the bronchitis. In many cases he thought the bronchitis was responsible for many of the symptoms, and a chronic bronchitis, with the production of mucus and pus, whether it occurs with tuberculous inflammation of the lungs, or by itself, is very favorably affected by the use of creasote. As regards its administration, he prefers the method of inhalation, keeping it up for a considerable part of the day; or the employment of enemata.

CORRESPONDENCE.

NEW YORK.

The Abuse of Medical Charity—The Office of Coroner—Arsenical Poisoning from Wall-paper.

The well-worn, but not yet threadbare, subject of the abuse of medical charity has quite recently again been brought to our notice by a vigorous article read by Dr. W. H. Bates before the Society of Medical Jurisprudence. He deals with this knotty problem in a wide-awake, practical manner, and draws a faithful pen-picture of the present condition of the medical charities in this city so true to life that no physician familiar with dispensary work can fail to find in it a record of his daily experience. Nor has the author been less painstaking in his search for the causes underlying this miserable state of affairs, as well as for the best remedy. He first calls attention to the fact that more than one-third of the population of this city ask for and obtain medical charity, and that the amount of free work done in the hospitals has increased 90 per cent. in the last decade, while the population has increased less than 50 per cent. He thought that the persons who were the proper objects of medical charity were those whose individual income was less than $500 yearly, for the reason that many such persons do actually pay their physicians. It is a well-known fact that many physicians earn the principal portion of their comfortable income from the people living in the tenement-houses, and that many leading physicians are willing to treat patients for the smallest fees, provided the appointment be arranged so as not to inconvenience the physician. The author then gives a number of instances, which I am sure from my own experience are of daily occurrence, in which people who are abundantly able to pay *something* to the physician visit the dispensaries, and perhaps after awhile, becoming disgusted with the slow progress of their case, go to some private physician and pay well for their treatment. Many dispensary patients lose half a day from their work every time they attend the dispensary; the time saved by being treated by a physician at his office would, in very many instances, enable them without difficulty to pay the physician quite fairly for his services. Investigations on an extended scale have shown that 50 per cent. of the applicants for medical charity are undeserving, and some inquiries have shown the proportion to reach as high as 80 per cent. One fact that is often overlooked in discussing this subject, is the great injury done to the *deserving* poor by overcrowding the dispensaries with those who should seek treatment elsewhere. In this way the time that can be devoted to each patient is reduced, and great haste increases the number of mistakes in diagnosis and diminishes the chances of speedy cure. It is not at all uncommon in large dispensaries for the physicians to devote on an average only one or two minutes to the examination and treatment of each case. Occasionally even the patients themselves stand aghast at the rapidity with which they are ground out of the dispensary mill. I am reminded in this connection of an incident that occurred a few weeks ago in one of our dispensaries. A man who had been to the dispensary several times before, and had always acted in a respectful and orderly manner, seemed disposed to grumble while waiting at the drug-store for his medicine. When asked what was the matter, he replied with an oath that he did not believe that any man living could tell what was the matter with him in eight seconds. It has often been claimed that systematic investigation of the circumstances of those who apply for medical charity would effectually remedy the evil, but experience does not bear out this statement, as the investigation by agents of the Charity Organization Society of suspicious cases applying at one of our dispensaries where thirty thousand new patients are treated annually, only lowered the abuse of medical charity 10 per cent., and in another dispensary, as a result of five years of work, the reduction was 25 per cent. This plan has proved impracticable on a large scale, partly on account of the great number of agents required to do the work properly, and partly because the patients, after being refused at one dispensary, learn how so to modify their story as to be more successful when they apply at another dispensary. The remedy that Dr. Bates suggests is, that every patient who applies to a dispensary shall *sign* a written statement, giving his address, total

income of the family, number in the family, and other similar details, and that it be made a misdemeanor, according to the laws of the State, for any person to make a wilful misstatement in filling out such an application. There are, of course, many objections that might be offered to this plan, most of which, however, are theoretical; and the strong point in its favor is that it has already been successfully employed by the Charity Organization Society in preventing the abuse of general charity.

Another matter that often elicits much unfavorable criticism from our physicians concerns the office of coroner. Most of us will admit that the system is not what it should be, or else that those in the office do not carry on its functions properly. How to improve this order of things was the subject of discussion at a recent meeting of the Section of Public Health at the Academy of Medicine. The discussion was opened by a paper by Dr. Stephen Smith, in which he stated that the functions of the coronor were chiefly medical and judicial, and that he thought it would be better to make the medical inquiry a part of the work of the Health Department, where the examination by medical experts would often render judicial inquiry unnecessary. The registrar of vital statistics of the Board of Health would have charge of the verification of deaths, and would discriminate between the death certificates that were entirely satisfactory and those that were not quite satisfactory. The latter class would then be personally investigated by assistants, and if there were any evidences of crime the attorney of the Board of Health, or one from the District Attorney's office, could take testimony and compel the appearance of witnesses before a court appointed to take the first proceedings in the case. Meanwhile the medical officer would make a thorough examination in a suitable place set apart for that purpose. As we have through the agency of the State Board of Health a most complete system for the verification of deaths, extending to the most remote places, and as the health officer in the country districts is generally far more competent than the man elected to act as coroner for the county, it follows that but few changes would be necessary in adopting this modified system. Mr. Clark Bell, after an exhaustive study of the subject, had come to the conclusion that no constitutional amendment would be necessary, as the needful changes could be secured by simple legislation.

In the discussion that followed the reading of this paper, Dr. Philip Donlin defended the coroner's office, and gave a sketch of the extent and character of its daily work. He suggested that by having more coroner's physicians and better accommodations at the morgue for examinations, the work of the office could be much improved, and many pathological investigations carried on that would be of lasting benefit to medical science.

Mr. Ellinger, who was formerly coroner for a period of six years, also favored having more coroner's physicians, and thought it would be an improvement to have the term of service of the coroner extended to the same length as that of a police magistrate.

After the discussion, it was recommended that the Academy of Medicine appoint a committee to confer with the medical and medico-legal societies in the city concerning needed reforms in the coroner's office.

A year has passed since the Academy took possession of its new and handsome building, and at the first anniversary meeting a popular address was delivered by Prof. Charles F. Chandler on "Arsenic in Common Life." In this address he devoted himself to the task of exploding the widely prevalent idea, both in lay and professional circles, concerning the dangers from arsenic in wall-paper. He said that he had himself believed in it without ever making any special investigation, up to the time when his duties in connection with the Board of Health required him to make it a special study. He then found that the idea had been started by a botanist, and that it was based on the most flimsy reasoning. He next made some experiments in the laboratory by passing air over sheets of paper—some moist and others dry—coated with Paris-green. Not a trace of arsenic was found in this air. Much of his address was devoted to a narration of cases that had occurred in Boston during a time when the people in that city were much excited over the supposed dangers from arsenical wall-paper. The most important case was that of an ex-mayor of Boston, who had been supposed to be suffering for a long time from this form of poisoning, but the post-mortem examination showed that he had died from cancer of the stomach. The wall-paper that had been supposed to be the source of the poisoning in his case had not been changed from 1817 to 1891. While it is quite possible that in the old-fashioned wall-paper, that the arsenical dyes were loosely attached to the paper, the arsenic might become detached and diffused through the air, the amount would ordinarily be quite insignificant; and in the wall-papers made in the last fifteen years no arsenical pigments have been used, and the presence of arsenic in these papers, as determined by delicate chemical tests, is due entirely to accidental impurities. Some of the papers that were thought to have caused poisoning had been on the walls for thirty or forty years. Supposing, for the sake of argument, that there were sixty square yards of paper in a room, each yard containing one grain of arsenic—the amount found in several of the cases quoted—and that during a period of thirty years *all* the arsenic had left the wall paper and had entered the human system without any being lost, this would be at the rate of one grain in six months, or only $\frac{1}{180}$ of a grain in each twenty-four hours. Many distinguished scientists have independently investigated this subject of poisoning from arsenical wall-paper, and they all agree in saying that there is "nothing in it."

REMARKS ON PROFESSOR GOODELL'S PAPER IN "THE MEDICAL NEWS" OF DECEMBER 5TH.

To the Editor of THE MEDICAL NEWS,

SIR: The current literature of abdominal and pelvic surgery is burdened, even cursed, with productions from those who have little natural surgical aptitude, no originality, less genius and still less wisdom born of experience. The average practitioner is forced to winnow the wheat from the chaff in such an article. He considers the source from which it emanates, and is unlikely to use a method of practice which he sees is based on theory, is dangerous, or has little or no practical utility. The

effect on the general practitioner and amateur operator is very different when he reads a production from the pen of the distinguished teacher and operator, Prof. William Goodell.

With these thoughts in mind I offer a few remarks concerning his article. I indorse much contained in this valuable paper. As an American I am deeply interested in the success of American operators. Professor Goodell makes the statement that many, perhaps the majority of American gynecologists, following the lead of Péan and Richelot, have adopted the procedure of securing the broad ligaments with forceps, and adds that there is hardly one, not excluding himself, who has not invented a special form of clamp. To me it is a matter of indifference how many operators have invented forceps. It is, however, a matter of great importance if any forceps has been invented and a principle of operating has been perfected by which the broad ligaments are first narrowed to a round mass and brought well down into the vagina so that the peritoneal lining of the pelvis can be closed above by perfect sero-serous approximation. The forceps that I use has a beak so constructed as to assist in bringing the peritoneum together above their grasp, thus securing absolute extra-peritoneal fixation of the stumps of the ligaments.[1]

Dr. Rufus B. Hall, of Cincinnati, who recently used the same forceps, writes me: "The principle of puckering up the ligaments is correct."

Of course, when ovaries and tubes are removed I prefer the silk ligature left long, but even then the peritoneal cavity must be perfectly closed (except where a small drainage-tube is inserted to remain twenty-four hours only).

Professor Goodell has less objection to the progressive silk ligature than to the forceps. In abdominal or vaginal hysterectomy I am an advocate of the silk ligature, but always aim to unite the serous membrane, so that there will be no raw surface left in the peritoneal cavity. After having seen Prof. Olshausen and other distinguished German operators use catgut, I am convinced that while experts like Olshausen and Goodell can secure faultless catgut and have ideal results with it, the average operator would have more deaths from hemorrhage and septicemia than recoveries, and would have better results with forceps constructed on proper principles, or with the silk ligature, which in itself affords capillary drainage from the tissue within its grasp. If daily subjected to tension it nearly always comes away by the end of the second week.

When serous membranes are nicely adjusted I have repeatedly found firm union in forty-eight hours, so that vaginal irrigation gave the patient relief by cleansing the wound now absolutely shut off from the peritoneal cavity and within reach of antiseptics.

I have no fears whatever of the antiseptic wash breaking up the adhesions of a serous membrane. By first puckering the broad ligament to a round mass and accurately approximating the serous surfaces I have recently had a series of twenty-one consecutive vaginal hysterectomies without a death. I am an uncompromising advocate of vaginal hysterectomy, believing it to be the best palliative treatment for cancer of the uterus, if nothing more, and for this reason I want to see all who undertake this operation enjoy the largest possible measure of success.

JOSEPH EASTMAN, M.D., LL.D.

INDIANAPOLIS.

[1] See THE MEDICAL NEWS, August 1, 1891.

THE RAGE FOR NEW DRUGS.

To the Editor of THE MEDICAL NEWS,

SIR: There appeared in THE MEDICAL NEWS of November 7th an able and vigorous editorial article based upon the report of a case of poisoning by "antikamnia," calling attention to the dangers of prescribing pharmaceutical products the composition of which is unknown, and roundly denouncing manufacturers for foisting such goods upon the profession.

But the substance named is only one of hundreds of so-called new remedies, the manufacturers from the sale of which, with the aid of the medical profession, are waxing rich. These preparations are effusively lauded to physicians by their introducers, and thrust upon our notice in every conceivable way—and it is rarely the case that the extravagant and often ridiculous claims made for them are not fortified by apparently reputable medical authority. This appears to be, in fact, a *sine qua non* to "success" in the new venture.

For the real cause of this evil, however, it seems to me that we need not go so far from home as to the chemist or to the pharmacologist. It is but incidental to a far greater evil that pervades the medical profession and for which physicians themselves are responsible. I refer to the craze for therapeutic novelties—the mad rush for new remedies that has been observable for the last few years.

It is a deplorable fact that manufacturers are not more eager to sell their new, fancifully named products than physicians are to prescribe them. Scientific conservatism has been flung to the winds and a spirit of reckless experimentation seems to have taken possession of the profession. The pharmacologists and chemists are merely profiting by the occasion. The credulity and the recklessness of physicians mean dollars and cents to the manufacturers. As between the latter and the physicians who prescribe their nostrums and by whose encouragement and patronage they thrive, the manufacturers are the less culpable.

It is indeed "time to speak plainly and to act courageously." It is time for such leaders in true medical progress as THE NEWS to call a halt upon the present reckless, indiscriminate, and dangerous practice of prescribing new and untried pharmaceutical products. It is not because of this tendency, but in spite of it, that the real advance in modern therapeutics has been made. No "new remedy" should find a place in the armamentarium of the private practitioner until its physiological and therapeutic actions have been carefully studied and its value proved by observers of unquestioned competency.

GEORGE EMERSON SHUEY, M.D.

MACCLENNY, FLA.

MAXIMUM PERCENTAGE OF ALBUMIN IN URINE.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of December 5th Dr. C. S. Stewart, in a clinical report on the action of

nitro-glycerin, says that he found in his third case "fully 50 per cent. of albumin in the urine." This is not the first time that I have met with such an assertion. Many cases have been related to me in which the physicians stated that they had found from 25 to 75 per cent. of albumin. It would be interesting to know the method by which such a percentage is obtained.

Let it be supposed that 1200 c.c. of urine are on an average excreted per day; that quantity of urine would, if it contained "fully 50 per cent. of albumin," carry with it more than 600 grams of albumin. The albumin found in the urine is, in the majority of cases, serum-albumin, the escape of which from the blood into the urine is due either to a histological change in the epithelium of the kidney, or to abnormal blood-pressure.

Human blood contains about 8 per cent. of albumin, of which about 3.4 per cent. is paraglobulin, and about 4.6 per cent. serum albumin. The amount of blood in the human body is about one-thirteenth of the body-weight. Thus it may be easily calculated that, according to the foregoing assertions, the whole amount of albumin in the blood is less than the amount excreted in the urine in one day. The maximum found by Vogel (Neubauer und Vogel, *Harnanalyse*, 9th ed.) was 28.3 grams per day, or 2.35 per cent. G. M.

WORMS IN THE AUDITORY MEATUS.

To the Editor of THE MEDICAL NEWS,

SIR: On June 13, 1886, G. B., a boy, twelve years of age, was brought to my office by a gentleman, who stated that he had extracted four worms from the boy's ear. Upon examination of the ear, I found catarrh of long standing, with purulent discharge and perforation of the drum. I also readily succeeded in extracting eight more worms, making twelve in all that were dislodged from the meatus that day. They were doubtless of the variety known as the fly-worm. The green fly, being attracted by the aural discharge, deposited its ova, from which developed the grubs.

W. T. SKINNER.

GLASGOW, DEL.

REVIEWS.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. By T. GAILLARD THOMAS, M.D., LL.D. Sixth edition, enlarged and thoroughly revised by PAUL F. MUNDÉ, M.D. Philadelphia: Lea Brothers & Co., 1891.

THE character of the previous editions through which this book has passed insure it in its new form a hearty reception at the hands of the medical profession. The sound conservatism of the work is in no way impaired by the progressive teaching evinced in the present revision. A text-book upon the diseases of women, to be of use to students and general practioners, can meet the varied requirements only by presenting the subject in the light of knowledge possessed by an author of exceptional experience. Such an author must know what to avoid as well as what to include in his subject. Extreme ideas, because alluring to the writer, should find no place in such a text-book. If the extensive experience of the author in this instance has already entitled him to his present position as a teacher, the revision of his work by one who offers "an active experience of twenty-five years as a writer and practitioner in the same specialty" cannot fail to increase the existing confidence of the profession in such a work.

The fact, however, of the reviser, as the result of his own experience, possessing mature ideas upon those subjects in which he may hold opinions at variance with those of the author, makes it difficult for him to so far modify his own views as to offer to the reader the impression of a conclusive opinion. This difficulty is increased by the necessity of the reviser stating in brackets his own views when differing opinions exist. This appears like an interruption to the text, although the reader finds the advantage of being able, in this way, to compare the views of two writers.

In regard to the arrangement of the book we think that it would have been more scientific to have described the inflammatory and positional disorders of the uterus in juxtaposition to the neoplasms, without separating these topics by introducing the chapters on para-uterine cellulitis, pelvic peritonitis, pelvic abscess, and pelvic hematocele.

The author's views upon the significance of laceration of the cervix serve as a wholesome correction to the enthusiasm of those that at present decry trachelorrhaphy, as well as the other procedures included under the head of minor operations.

The chapter on electricity, added since the last edition, is in every way to be commended. The clearness of the descriptions and the conciseness of statement render the contents of this chapter invaluable to the student, while the conclusions of the writer, as the result of a large experience, appeal to the more experienced practitioner.

We regret that the chapter on pelvic hematocele has not dealt more fully with the question of causation, relative to ectopic gestation. In view of the recent advance in this subject the writer's views would have been interesting not only to the specialist, but of great value to the student. The critical reader will find the chapter on diseases of the Fallopian tubes well up to the standard of our knowledge at the present time, especially on the subject of drainage. The use of the clamp and cautery, although mentioned in the text, is not insisted upon; and while the chapter contains all that is essential to a thorough knowledge of the technique, simplicity of method—so universally adopted now among surgeons—is clearly advocated. The profession will receive with gratification the wholesome warning "against the indiscriminate, hasty, and routine performance" of laparotomy in the treatment of diseased appendages.

The teaching in this work is preëminently conservative and at the same time progressive. Its value to the profession lies in the fair discussion of opposite opinions and the absolute avoidance of even an appearance of dogmatism.

ESSENTIALS OF PHYSIOLOGY, ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS; PREPARED ESPECIALLY FOR STUDENTS OF MEDICINE. By H. A. HARE, B.Sc., M.D., etc. Third edition. Philadelphia: W. B. Saunders, 1891.

ACCORDING to the notice on the title-page of this third edition, it has been "thoroughly revised," and in his preface the author assures us that he earnestly desires

that the depth and scope of medical education may be increased. But the volume contains much that disproves the truth of the notice and the sincerity of the assurance. There is also everywhere an incomprehensible and slovenly use or abuse of the English language. We can cite only a few of the many illustrations that have struck the attention in turning the pages. Take the first sentence: *Physiology is the study of vital phenomena, which are always present in living things be they animal or vegetable.* One can only ask, Where but in living things could vital phenomena be present? Why the word *always?* and where except in animal or vegetable things are vital phenomena seen?

If it be worth mention, why not correctly state the number of chemical elements?

What nonsense to say that "the saline taste of the blood is dependent upon the salts contained in it."

The amazing answer to the question, *What are the physical forces of the circulation?* is too long to quote.

What would a physiologist say to the statement that "the blood descending in the femoral artery shoves the blood up the corresponding vein?"

The optic nerve is said "to appreciate light," "yet light can never be said to produce activity of the nervous protoplasm by contact."

As to the function of the choroid coat, not a word is said about its true function, or its vessels, but much about its "black pigmented cells"—which do not exist. The pigment layer belongs to the retina.

"Each portion of the retina" is said "to receive different colored rays. The peripheral portion sees the red rays, etc."

Diplopia is said to be "due to the fact that each eye receives the impulse at a different time from the other."

Hypermetropia is defined as a condition "in which objects are focussed behind the retina," and the lens of the myopic eye is said to be "too convex, while in the hypermetropic eye it is not convex enough."

The function of the Eustachian tube is said to be "to equalize the pressure within and without."

The plates from Arnold's *Icones Nervorum Capitis* are most excellent.

The Surgical Treatment of Wounds and of Obstruction of the Intestines. By Edward Martin, M.D., Instructor of Operative Surgery, University of Pennsylvania, Surgeon to the Howard Hospital, Assistant Surgeon to the University Hospital, and H. A. Hare, M.D., Professor of Therapeutics, Jefferson Medical College; Attending Physician to St. Agnes Hospital. 8vo., pp. 169. Philadelphia: W. B. Saunders, 1891.

This essay was awarded the premium of the Fisk Fund by its trustees at the annual meeting of the Rhode Island Medical Society, held at Providence, June 12, 1890, and this distinction should be a sufficient guarantee of merit.

The subject of intestinal obstruction is dealt with in twelve chapters; two additional chapters are devoted to wounds of the intestines, the whole being rounded off by a very complete collection of 130 cases of celiotomy for gunshot wounds of the abdominal cavity, which are very instructively analyzed in the final summary.

The various subjects embraced under the vast and comprehensive title of intestinal obstruction are generally treated with judicious discretion and well-balanced judgment. If there is a distinctive feature that is everywhere recognizable in this essay, it is its conservatism. In all conflicting questions, in which the contending parties are liable to run to extremes, we find the authors invariably inclining toward the safe old percept *in medio tutissimus*, etc., the verdict of the authors being generally grounded on sound reason. This tendency is well illustrated in the chapter on peritonitis, in which the authors are neither exclusive advocates of purgation *à la* Tait or of opium *à la* Alonzo Clark. There are cases for opium and cases for salts, and they tell us which are the cases respectively. In the diagnosis and treatment of obstruction, the relative merits of watery enemata and gaseous insufflation are considered. Here, in opposition to distinguished authority, the authors believe in the superiority of water as an injecting medium, especially for therapeutic purposes, and while many will not be prepared to admit the full extent of their contention, none will deny, after reading the argument, that there is more good service in water in the treatment of obstruction than some recent writers would teach us to believe. In connection with rectal injection, the important subjects of heat-preservation during the injection of the large enteroclysmata required in intestinal obstruction, as well as during operation, and the effects of intra-abdominal pressure produced by forced enemata, are studied in a clear and conclusive manner. This part of the work, which is already familiar to the readers of Philadelphia medical literature, is indeed most original and commendable, and is distinctly illustrative of the value of laboratory research to the clinician.

The spirit of conservatism is again manifested in the more strictly surgical sections. For instance, simple enterostomy as distinguished from the more formidable abdominal section, receives here an amount of attention and commendation that we would scarcely find in the writings of the more aggressive class of operators who barely tolerate it and show a decided disposition to relegate it to the past rather than refer to it as an operation of the future. In justice to Senn and his followers, we believe that a more extended reference to the relative merits of enterostomy and lateral anastomosis should have been made, since modern "aided" anastomosis has as decided a claim to be considered an emergency operation as enterostomy—though clinical data upon which the comparison could be instituted are still wanting and are only available by experimentation.

Much more could be said in the matter of technica details in intestinal operations than is contained in this work, though the essential operations are sufficiently described. It is probable that in a second edition the authors will lay more stress on the positive superiority of the plate over the ring as an aid to anostomosis, and will also insist more emphatically on the greater dangers of circular enterorrhaphy as compared to lateral anastomosis in enterectomy.

The hemoglobin test, suggested by the authors, in establishing the frequently perplexing differential diagnosis between shock and hemorrhage in abdominal injuries, may prove helpful to hospital and city surgeons. The test is a fairly accurate guide to the volume of blood

lost, and with the aid of the hemoglobinometer "can be made in two minutes."

The printer's errors are few, but of these one deserves attention: in page 120, the word "enterorrhaphy" appears instead of "enterostomy," an oversight that may easily lead to confusion.

EVIDENCES OF THE COMMUNICABILITY OF CONSUMPTION. By G. A. HERON, M.D. (Glasgow), Fellow of the Royal College of Physicians of London; Physician to the City of London Hospital for Diseases of the Chest. 8vo., pp. 167. London and New York: Longmans, Green & Co. Philadelphia: P. Blakiston, Son & Co., 1890.

DR. HERON believes that the bacillus tuberculosis of Koch is the sole and efficient cause of tuberculosis; that the disease is propagated by infection chiefly through the sputum of the phthisical, but also through infected meat and milk, and in other ways. He urges that the original experiments of Koch, since abundantly confirmed; the elaborate investigations of Cornet, especially those into the fatality of tuberculosis among the nursing conventual orders of Prussia—which are here reproduced—and the accumulating clinical evidences of transmission of consumption, much of which he cites in summary in an appendix, all combine to leave no doubt as to the correctness of the position taken. He therefore advocates the utmost care to prevent transmission by sputum and by infection of rooms, clothing, and so forth, and the legal slaughter and extinction of all tuberculous animals. The alleged immunity of Jews from tuberculosis is attributed in part to their sanitary laws, such as the annual scrupulous and exhaustive house-cleaning of Passover, and more especially the rabbinic ordinances as to "kosher" meat. The increase of tuberculosis among Russian Jews in London in the last two years he attributes in part to the brutal persecutions by which Alexander the Cruel has disgraced the Christian civilization of the nineteenth century, and in part to the fact that the refugees, having been robbed of their all by Russian officials, are compelled to herd in those districts of London where poverty and vice have long been breeding disease, and as a consequence have been exposed to the infection from which their religion and its laws of cleanliness and sobriety had hitherto protected them. In this he finds an additional confirmation of the view that phthisis originates by infection, and only by infection. While the reviewer does not subscribe to the extreme view of the author, he is at one with the latter in the practical lessons of precaution taught. The work is well done. It has a good index, and to English-reading physicians will be extremely useful for reference.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION. Twenty-third Annual Session, held at Waco, Texas, April 28, 29, 30, and May 1, 1891. Edited by HAMILTON A. WEST, M.D., Galveston, Texas.

THIS volume of the transactions of the Texas State Medical Association contains a series of papers of considerable interest and of practical importance. It is impossible to enumerate all the names of its contributors, or even to detail the important features of its most noteworthy articles; suffice it to say that the book is a credit to the Association and to its individual contributors, and will amply repay the reader for the time spent in its perusal.

The following is a list of a few of the contributions, together with the names of the respective authors:

"The Responsibility of the Medical Profession in the Use of Alcoholic Stimulants," by W. A. Morris, M.D.; "Points of Interest in the Clinical Examination of the Urine," by J. H. Wysong, M.D.; "Some Practical Observations on the Management of Albuminuria of Pregnancy," by J. F. Y. Paine, M.D.; "Wiring of the Vertebræ as a Means of Immobilization in Fractures and Pott's Disease," by B. E. Hadra, M.D., etc.

STORIES OF A COUNTRY DOCTOR. By WILLIS P. KING, M.D. With illustrations by T. A. FITZGERALD. Philadelphia: Hummel & Parmelee, 1891.

IN the nearly four hundred pages of which this volume is made up, the trials, incidents, experiences and observations that enter into the life of a country practitioner of medicine are portrayed with a certain dash of humor. The text is not only included between pages of advertisements, but in one or two places is interleaved with them. The book is otherwise neatly printed and bound. It may meet the wants of a certain class of readers.

MASSAGE: A PRIMER FOR NURSES. By SARAH E. POST, M.D., Lectures before the Training School for Nurses connected with the Bellevue Hospital, Mt. Sinai Hospital, and St. Luke's Hospital, New York, also with the Memorial Hospital, Orange, N. J. 12mo., pp. 47. New York: Nightingale Publishing Co., 1890.

THIS little book is to be highly commended for its lucidity and brevity. It does not attempt to teach the practice of medicine nor to throw upon the operator the responsibility for deciding when and how massage is to be applied for the relief or cure of abnormal conditions. It gives, however, clear, concise, and reliable directions as to the manner in which the instructions of the physician upon these points are to be carried out.

A COMPEND OF HUMAN PHYSIOLOGY: ESPECIALLY ADAPTED FOR THE USE OF MEDICAL STUDENTS. By ALBERT P. BRUBAKER, A.M., M.D., etc. Sixth edition, revised and improved, with new illustrations, etc. Philadelphia: P. Blakiston, Son & Co., 1891.

PROFESSOR BRUBAKER meets the continued demand for his manual with revision, enlargement and new illustrations. Barring the objection to be urged against all such works, no criticism of this capital little book can be offered.

CORRECTION.

In "A HINT TO THE LITERARY MEN OF THE PROFESSION," in THE MEDICAL NEWS of December 12, on page 682, the place of publication of the *Journal de Physiologie* should have been printed Paris, and not Berlin; and that of the *Archiv für klinische Chirurgie* should have been printed Berlin, and not Leipzig.

BOOKS AND PAMPHLETS RECEIVED.

Criminal Aristocracy; or, The Mafia. By Arthur MacDonald. Reprint, 1891.

On the Treatment of Diphtheria in America. By A. Jacobi, M.D. Reprint, 1891.

Extra-cranial Aneurism in Early Life. By A. Jacobi, M.D. Reprint, 1891.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

HIP-JOINT DISEASE AND SOME NEW LATERAL-TRACTION SPLINTS FOR ITS TREATMENT.

BY A. M. PHELPS, M.D.,

PROFESSOR OF ORTHOPEDIC SURGERY IN THE UNIVERSITY OF NEW YORK AND IN THE NEW YORK POST-GRADUATE SCHOOL AND HOSPITAL; PROFESSOR OF SURGERY IN THE UNIVERSITY OF VERMONT.

THE profession of America is somewhat divided upon the subject of the treatment of hip-joint disease, and for the purpose of adding, if possible, a few facts to our knowledge of the subject I present this paper.

1. I will state that I believe that muscular spasm is always present in morbus coxarius.

2. That muscular spasm produces great intra-articular pressure.

3. That the articular pressure produced by the muscular spasm is a very serious element in bringing about the destructive changes that are so frequently and so generally seen in joints untreated or badly managed.

4. I also believe that, so far as possible, *absolute immobilization of an inflamed joint until perfectly cured should be insisted upon, and that voluntary or passive motion should be most emphatically prohibited.*

If these ideas are correct, clearly one of the most important steps to be taken in the management of hip disease is to control the spasm of the powerful muscles operating upon the joint by means of extension and fixation applied so as to antagonize the contracting muscles, and put the joint at rest. The great adductor muscles, as is well known, pass obliquely across the body from the pelvis to the femur. The great glutei muscles, the abductors of the thigh, also pass obliquely from the pelvis to the great trochanter. The rotators take the same direction. These muscles are affected by spasm in hip-joint disease, and they make traction in the line of the neck and shaft of the femur. To control the spasm of these muscles and to relieve intra-articular pressure, lateral traction must be made in a line corresponding to the axis of the neck. The flexor muscles of the thigh should be controlled by longitudinal traction, and the entire joint fixed. This will be explained later.

How long should the joint be fixed? Until it is perfectly cured. The fear of ankylosis has tended to deter the profession from adopting prolonged fixation of joints inflamed. Hence the devising of the long traction-splint, which admits of free motion of the joint. It was born of the fear of ankylosis on the one hand and the desire to give the patient exercise on the other. It is still extensively used by eminent members of the profession, notwithstanding that those who use it, as well as many of us that have used it, know that the vast majority of the cases so treated either result in ankylosis, shortening, or almost without exception, angular deformity. It is not my purpose to denounce the brilliant advance in treatment that the advent of the long traction-splint marked over the older methods in vogue at the time of its invention, but only to call attention to its defects, and, if possible, to point the way to other methods that I hope may overcome the errors of the past.

The belief that motion, by increasing the circulation, stimulates the inflamed joint to healthy action, and also the fear of ankylosis, have led eminent men to employ passive motion throughout the course of the disease.

To determine the question whether prolonged fixation of the healthy joint would result in ankylosis, with Prof. W. Gilman Thompson I performed a series of experiments in the Loomis Laboratory upon dogs. Four dogs were selected, and their legs immobilized; the joints were examined at the end of the sixth week and at the end of three and five months. At the end of six weeks, one of the dogs, the leg of which had been placed in a cramped position, so as to produce great intra-articular pressure, was killed. In this case, upon opening the joint, a dark-red spot was found upon the head of the bone that corresponded to a similar spot in the acetabulum, marking the point of contact between the head and the socket. There was also congestion of the entire head of the bone and of the ligamentum teres closely resembling the congestive stage of inflammation. The synovial membrane was normal; a section was made of the head of the femur which divided it into halves. Beneath the articular cartilage, and extending a considerable depth into the head of the bone, the cancellated structure was deeply congested and filled with coagulated blood. The other dogs were killed at the end of three and five months, and the joints were found to be normal.

The conclusions at which we arrived from these experiments were:

1. That a normal joint will not become ankylosed by simply immobilizing it for five months.

2. That motion is not necessary to preserve the normal histological character of a joint.

3. That when a healthy joint becomes ankylosed, or its normal histological character changed, it is not from prolonged rest, but from pathological causes.

4. That immobilizing a joint in such a manner as to produce and continue intra-articular pressure will result in destruction of the head of the bone and of the socket against which it presses, as is evidenced by the specimen secured in one of the cases.

5. That atrophy of the muscles of the limb will follow prolonged immobilization of the joint.

If these experiments prove that prolonged fixation will not produce ankylosis of a normal joint, that motion is not necessary for the preservation of its normal function, then the causes of ankylosis must depend upon the pathological conditions, and not upon prolonged fixation.

In the treatment of inflamed joints it is claimed that motion prevents ankylosis. This must be a mistake, because the statistics of joints so treated show that ankylosis and deformity to a greater or less extent are by far the most frequent results.

The statistics published by Shaffer and Lovett in the *New York Medical Journal* show that, in 39 cases finally reported upon in the series, there was

Ankylosis in	19
Slight motion in	6
	25
Motion of from 10 degrees to 44 degrees in	7
Motion to a right angle in	3
Motion free in	3

The three with free motion were treated during the first stage of the disease. Two were under three years old. There were only two cases without shortening.

The splint used was the long traction-splint, which admits of free motion at the hip-joint. To test this question still further, I sent a patient with knee-joint disease, whom I had nearly cured, to a distinguished masseur for treatment by massage. I had perfectly fixed her joint for one year. The apparatus was removed, and she had motion to about 35 degrees; there was no pain, and she could walk with ease. She was attended daily by the masseur. Her leg was flexed and systematically moved and rubbed. After six months I found almost complete ankylosis. A recent examination showed fibrous ankylosis and only a slight degree of motion.

The so-called "ossified man" paid a masseur to move his inflamed joints during two years of his early joint-trouble. The result was perfect bony ankylosis of all the joints that were inflamed.

The fakirs of India, after twenty years of penance, holding their limbs in one position, quickly regain the normal use of their joints after their religious frenzy has passed. (Thomas.)

I have several cases of children suffering from joint-disease that have been immobilized in a portable bed ten, twelve, and eighteen months, the joints of the lower extremities being kept perfectly quiet during the time. Recent examinations demonstrated that ankylosis had not taken place in the normal joints, while the inflamed joints are freely movable.

FIG. 1.

Fig. 1 is taken from the photograph of a child suffering from hip-joint disease that had been immobilized in a plaster-of-Paris portable bed for sixteen months. The case was perfectly cured, notwithstanding that aspiration of a quantity of pus from the joint was necessary.

I desire to place these cases on record, to stand by the side of the reported cases of ankylosis, supposed to be due to prolonged rest of joint.

In the treatment of wounds, inflamed organs and

tissues, rest is one of the most important surgical laws. The surgeon protects the wound from friction by means of proper dressings, and the ophthalmologist puts the inflamed iris at rest by the use of atropine. Since rest is a surgical law in the treatment of inflamed tissues in other parts of the body, and motion is not necessary for the normal preservation of a joint (nor can it in any way prevent ankylsi s of an inflamed joint) I believe that we should not make an inflamed joint an exception to a well-established surgical law.

The question of ankylosis is determined by the severity, the character, and the duration of the inflammation, the presence of intra-articular pressure, the subsequent cicatricial contraction of soft parts around the joints, the tissues involved, and the amount of destruction of bone and cartilage. Motion of an inflamed joint only interferes with repair, and more certainly hastens the case on to ankylosis and deformity. To prevent this calamity, when possible, absolute rest and the relief of intra-articular pressure should constitute the plan of treatment. Inflamed joints treated upon this plan furnish by far the fewest cases of ankylosis, limited motion, and deformity.

Let us now consider mechanical treatment. During the period of deformity and the acute and primary stage of the disease, nearly all cases of hip-joint disease are better treated in bed than elsewhere—for the reason that in bed the joints can be more perfectly immobilized. Here we can apply extension uninterruptedly, and at the same time fix the joint by holding the limb and body in a fixed position. No one would for a moment think of adjusting a walking splint to the fractured limb of a child, or even allow the child to go about on crutches with a splint. Still this practice is almost universally resorted to in hip-disease—a disease much more menacing to life and limb than a simple fracture of the femur.

At the Post-Graduate School and Hospital we usually put our patients to bed for a time varying from three weeks to three or four months, until the deformity is entirely overcome, and the more active stage of the disease somewhat ameliorated.

Fig. 2, from a photograph, shows a patient with the bed-dressings adjusted. A long splint is put on the well limb, and the leg and body to the axilla are enveloped in a plaster-of-Paris bandage. Adhesive plasters are applied to the limb; extension and traction are made in the line of the deformity and at right angles to that line—from six to ten pounds of longitudinal traction, from one to three pounds of lateral traction being employed, for the purpose of overcoming the spasm of the adductor and abductor muscles.

FIG. 2.

Children under three and a half years of age are treated with a plaster-of-Paris portable bed. Others are put upon crutches, with a high shoe and a lateral-traction fixation splint adjusted.

The bed-treatment, as described, relieves pain, overcomes deformity, and the symptoms subside. This suggests the perfection of mechanics. If the principle could be continued, and the patient allowed to exercise, the perfection of mechanical treatment would be attained. To accomplish this I devised the fixation lateral-traction splints.

To make the portable bed, place the child on a piece of paper; mark around him, with the limbs somewhat spread. Put this piece of paper on a board one-half inch in thickness, and cut the board to fit the pattern. Upholster the board with cotton batting, and cover with cotton cloth. A piece of rubber cloth is placed across the portable bed.

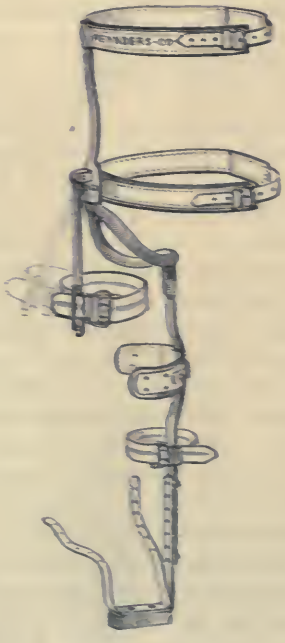
The child is laid on the board and enveloped with the plaster-of-Paris bandage from the foot to the axilla, to the thickness of one-half inch. When the plaster becomes set the front is cut away. The child is now removed; the bed is trimmed for the inside either by pasting flannel or rubber adhesive plaster over the plaster-of-Paris.

The child is placed on this and bandaged in. Extension is made to the foot-piece of the bed, and

lateral traction is made by means of the bandage passed around the leg and tied to the side. Figs. 3, 4, 5, 6, 7, 8, and 9 are representations of lateral-

FIG. 3.

FIG. 4.



traction splints, double and single; with inside and outside bars. Figs. 8 and 9 show the single and double splint adjusted.

The splint extends from the sole of the foot to the axilla, and is supplied either with an inside bar (Figs. 3 and 4) or with an outside bar (Fig. 6).

Instead of a strap passing around the perineum,

FIG. 5.

FIG. 6.

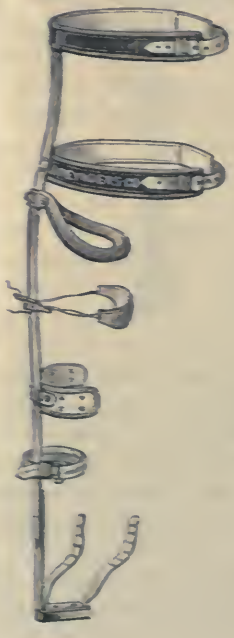
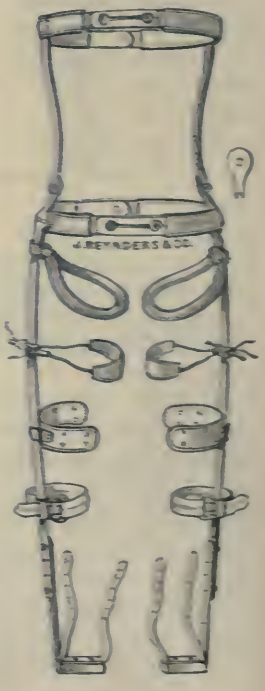


FIG. 7.



a steel ring is substituted, which catches the patient at the tuberosity of the ischium, and does not press upon the muscles.

Lateral traction is made in one splint by means of the lateral-traction lever (Figs. 3 and 4), and in the other splint by means of a strap tied to the side bar (Fig. 6); longitudinal traction is made as in the ordinary traction-splint. This splint im-

FIG. 8.

FIG. 9.

mobilizes the hip-joint, prevents the possibility of angular deformity, and applies traction so as to overcome spasm of the muscles that operate upon the thigh. The patient is never allowed to step upon this splint. Splints to immobilize the joint must extend above and below the joint. The long traction-splint stopping at the joint does not immobilize it, and the patient injures the joint by stepping upon it, as is evidenced by the almost constant increase in the deformity, observed in a considerable percentage of all cases.

It has been stated that patients wearing the splint extending up on to the thorax cannot sit down. This is certainly incorrect, as all of these patients can sit very comfortably on the side of a chair, with the diseased limb hanging over the side.

The crutches are an inconvenience; the long splint passing up on the body is an inconvenience, but the patient had better submit for a year or two to this slight inconvenience than to go through life with a deformed limb.

The Thomas splint, like the long traction-splint, only tells half the story. Thomas originally believed that the best result to be attained in hip-joint disease was ankylosis. Believing that prolonged rest would result in ankylosis, and that fixation of the hip-joint could only be accomplished by grasping the body above and below the joint (which is a fact), he devised the splint bearing his name. This splint extends from the axilla to the calf posteriorly. His patients recovered without angular deformity, but nearly all had shortening, many to a great extent, and abscesses occurred with astonishing frequency. A large number of cases presented to the British Medical Association by Mr. Sidney Jones showed that motion was present in nearly every case. Thomas's splint, not controlling muscular spasm, allows of great intra-articular pressure, resulting in destruction of the joint and the formation of abscesses.

Another serious objection to the Thomas splint is that the patient will step upon the foot. The splint, ending as it does at the calf, protects the limb only so far as the normal movements are concerned. If the splint extended below the foot, and the patient then attempted to step upon it, and if there were a perineal strap, he could not do so much damage to the joint.

My Results.

Cases received before the development of abscesses rarely develop them.

Small abscesses and effusions into the joint are frequently absorbed or heal by primary union after operation.

Discharging sinuses rapidly cease discharging unless there is extensive bone-disease.

Many cases recover with perfect motion.

All cases recover with but slight or no angular deformity.

Shortening of the limb does not increase, and cases of ankylosis I seldom see.

To conclude, my observations lead me to believe that one of the most serious elements of destruction in hip-joint disease is the trauma and pressure produced by muscular spasm; that fixation of the joint without extension is an impossibility; that the successful treatment of the joint must depend upon its absolute immobilization, which can only be produced by proper extension and fixation; that the constitutional treatment of hip-joint disease amounts to but little, independently of mechanical treatment; that mechanics is everything; that exten-

sion in the line of the axis of the shaft and in the time of deformity alone in hip-joint disease is entirely wrong; that extension should be made in a line parallel to the axis of the neck—in other words, two lines of extension—otherwise the idea of extension is not perfectly carried out; that ankylosis of the joint is not produced by immobilization, but by the severity and character of the inflammation; that the long traction hip-splints in general use neither properly extend nor immobilize the joint; that in a large percentage of cases the intra-articular pressure results in the destruction of the joint or in ankylosis, as is proved by statistics; that the results in hip-joint disease should be as good as those in knee-joint disease, and will be, provided perfect immobilization can be maintained; that patients should never be allowed to step upon any portative apparatus; that a high shoe on the well leg, and crutches, should be insisted upon until the patient is cured; finally, that the angular deformity seen in cured cases should not occur—such cases are a standing rebuke to the splint and methods employed. In other words, no patient with hip-joint disease need ever recover with angular deformity. In exceptional cases a slight degree of deformity had better be left than that resort be had to osteotomy or extensive myotomy.

SYPHILIS IN ITS RELATIONS TO THE REPAIR OF SURGICAL LESIONS.[1]

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I AM frequently asked whether a proposed surgical operation is safe, in view of the fact that the patient upon whom it is proposed to operate is suffering from more or less recent syphilis. I also find that general practitioners often advise patients that fall under my care against surgical operations, for the sole reason that said patients are affected with constitutional syphilis more or less remote.

I have been quite observant of the phenomena attending the healing of operation-wounds in syphilitic subjects, and I have come to the conclusion that *per se* syphilis has little or no effect in retarding repair. In many syphilitics I have had operation-wounds heal with exceptional promptness. An excellent illustration of the favorable course of simple incised wounds in syphilitic subjects is to be found in the excision of the primary lesion of syphilis. In a large number of cases of excision of hard chancre I have found that primary union was the rule. In mixed sores I have on several occasions seen reinfection and chancroidal ulceration following excision. I will state that these cases of mixed sores were operated upon entirely experimentally, as I do not consider it good practice to deal with such sores in this manner. In some cases —and in a far greater proportion than those that practise excision have acknowledged—induration of the cut edges will occur, but this only happens several days after primary union of the incision has occurred. If the operation be performed some days after the chancre has ceased to progress, and has become stationary, induration of the cut edges is not likely to occur. In some instances induration of the cicatrix will occur as a consequence of irritation a week or more after the incision is perfectly healed; but these untoward phenomena are not the result of imperfect repair, but are the result of a rapid proliferation of cells determined by irritation of the cicatrix after the process of ordinary tissue-repair is completed. The question of the possible local character of the chancre and reinfection of the cut surfaces enters into consideration in this connection, but does not concern us here.

In patients with latent secondary syphilis, suppuration, sloughing, and ulceration in operation-wounds are frequently attributed to the constitutional taint when the fault lies in the technique of the operation. Notwithstanding the fact that this explanation is very consoling to the surgeon, it is my opinion that a clean, aseptic operation in patients that are syphilitic, but in whom the syphilis is not in active efflorescence, will heal quite as promptly and perfectly as in entirely healthy individuals. This is not true, however, of suppurating and infected wounds; such lesions heal very slowly or not at all, until thorough and vigorous treatment of the constitutional malady is instituted. The difference between a clean, incised wound (that, when aseptically made and antiseptically dressed, is productive of little or no irritation from the first and of absolutely none after the lapse of a few hours), and pathological processes that produce continuous irritation, is very marked in syphilitic subjects. We know that the latent tendency of connective-tissue cells to proliferation and degeneration greatly exceeds the physiological limits when once the organism becomes tainted with syphilis; continuous irritation is prone to develop this latent energy of syphilized cells, with resulting prolonged suppuration, tissue-hyperplasia, ulceration, and perhaps sloughing. If we add to the irritating effects of the lesion itself the condition of sepsis, the morbid process is necessarily exaggerated.

When secondary syphilis is active and severe syphilides are present, any surgical lesion may determine a deposit of syphilized material at the particular point involved. This material may break down

[1] Read before the Chicago Academy of Medicine, July 10, 1891.

and ulceration of tissue result. So far as my observations go, it would, however, seem that this tendency is modified chiefly by the primary resistance of the patient, rather than by the severity of the syphilis, and I think it will be found that when once patients with active syphilis do badly, more reliance is to be placed upon tonics than upon vigorous anti-syphilitic measures. Virulent surgical processes, such as erysipelas, vaccinia, and chancroid, occurring in broken-down patients with constitutional syphilis, whether latent or active, are especially liable to determine a deposit of syphilitic neoplasm in the affected tissues.

With regard to the behavior of erysipelas in this respect, I will call attention to the fact that it has been recently claimed that erysipelas is curative of syphilis. I think that I am justified in being a little dogmatic regarding this particular point, as at the New York Charity Hospital, which has a number of pavilions devoted exclusively to cases of erysipelas, of which a large number are annually treated, I had exceptional opportunities for the study of erysipelas as seen in syphilitic patients. I have seen many cases of erysipelas occurring in syphilitic subjects, but I have failed to see any constitutionally curative effects from erysipelas; on the contrary, syphilitic patients that became debilitated by severe erysipelas were quite apt to be returned to the hospital within a comparatively short time suffering from an outcropping of syphilitic lesions. It was an experience so familiar as to be a matter of routine observation, that the sinus and suppurating surfaces remaining after phlegmonous erysipelas in syphilitic patients were very obdurate until constitutional treatment was instituted.

Horwitz[1] reports a case in which a patient with deep and extensive syphilitic rupia was apparently cured by a severe attack of erysipelas. The same author reports another case in which an ulcerating gumma of the leg was attacked and apparently cured by an attack of erysipelas. Neumann[2] reports two cases of a somewhat similar character. There is no question as to the accuracy of these observations. I do not admit, however, that such cases necessarily prove any antagonism between the streptococci of erysipelas and the germ of syphilis or its products. Erysipelas cures a simple ulcer, and the hard, callous ulcers of the leg, quite as readily as the syphilitic processes described by the authors mentioned. Not that I deny the possible antagonism of germs of various kinds, but I believe that in our microbic enthusiasm we are forgetting the relations of such processes as erysipelas and syphilis to tissue-nutrition. As is well known, it is not the poison of syphilis *per se* that prevents healing of syphilitic ulcers, but it is the local choking up of tissues with the syphilized cells. Erysipelas is for the time being attended by greatly exaggerated activity of the nutritive processes and a rapid breaking down and removal of the syphilitic neoplasm. Inasmuch as the syphilis has probably no directly corrosive action upon the tissues, and no effect at the site of the neoplasm other than that incidental to a heaping-up of rapidly proliferated material, the erysipelas runs essentially the same course as under ordinary circumstances. I am of the opinion that the cessation of active anti-syphilitic treatment and the substitution of the tonic and stimulant regimen so essential in erysipelas, has much to do with the beneficial effects of erysipelas in such cases as those described by Horwitz and Neumann. It is to be remembered that malignant syphilis is probably so not because of a high degree of toxicity of infection, but because of a high degree of constitutional susceptibility and lack of tissue-resistance. The effects of a germ of any variety depend on the condition of the soil in which it is implanted. To say that erysipelas is beneficial to the local process in patients suffering from syphilitic ulceration because the streptococcus of the one antagonizes the bacillus of the other—admitting for the sake of argument that syphilis has a bacillus—is the argument of *post hoc propter hoc* with a vengeance! If, however, we admit the clinical facts, and explain them by a modification of the soil, we are at least within the bounds of logic.

As to this point, although irrelevant to the immediate question in hand, it is worthy of note that in spite of all that has been said regarding the relation of the bacillus tuberculosis to consumption, and the action of the latest scientific phantasm, tuberculin, upon the disease, we are still brought face to face with the discouraging fact that we have no method of treatment to offer that is more reliable than that of our medical forefathers, who achieved their best results from measures that modify the soil in which the bacillus flourishes. There are few clinicians that, however enthusiastic they may be regarding the lymph-treatment, would not give more for measures of hyper-nutrition and super-oxygenation than for all the lymph ever manufactured. I would not pose as an iconoclast, but I think that we had better realize that there is much in the heritage of philosophy that the fathers in medicine have left us. Our hero-worship and our dalliance with strange gods is fast leading us away from the philosophical relations of medicine into the realms of medical sensationalism and fad-ism.

Vaccination of subjects recently syphilitic is apt to be followed by unpleasant results. In this connection I recall a case in which I vaccinated

[1] THE MEDICAL NEWS, March 21, 1891.
[2] Allg. Wiener med. Zeitung, 1888.

a gentleman who, for about three months, had been under treatment for syphilis. For a short time the vaccine vesicles ran their ordinary course; they finally dried, but pus formed beneath them, and ulceration progressed until a perfectly typical syphilitic ecthymatous ulcer resulted. This extended to the size of a half-dollar and did not yield until I substituted the mixed treatment for the mercury that the patient was then taking. Aside from his syphilis this patient was healthy, and as he was taking mercury in small doses, there is no question in my mind as to the relation of the syphilis to the ulceration. In this connection the question arises whether such instances do not explain many cases in which the accusation of having used impure virus is made against the physician. In children with hereditary syphilis, such a case might lead to results very embarrassing to the physician. I have in mind the case of a practitioner that narrowly escaped a malpractice suit at the hands of the parents of a child that, it was claimed, lost its eyesight as a result of a syphilitic keratitis following vaccination with impure virus. Knowing the gentleman that had vaccinated the child, and being assured by him that he had used bovine virus obtained from a reliable firm, and furthermore, being rather skeptical as to the possibility of the existence of the syphilized heifer, I took some pains to inquire into the case. I found that the vaccinia had run its usual course for about two weeks, when transformation into an ulcer occurred, and it was less than two weeks after this that the trouble with the eyes developed. This alone was enough to exculpate the physician, and if it were not, the cachectic aspect of the child, the peculiar appearance of its teeth, and the absence of axillary bubo certainly proved innocence. It required very little argument upon my part to convince the father of the child that it was best not to take his case into court.

Chancroids occurring upon syphilitic subjects are likely to become phagedenic, and gangrene is likely to occur in patients broken down in the period of sequelæ from over-treatment and the disease in combination. I am inclined to think that over-active treatment has more to do with the constitutional condition and tissue-depravity than the syphilis.

I have had a rather limited experience in fractures occurring in syphilitic subjects, but I have not noticed any difference between the rapidity and thoroughness in repair of otherwise healthy subjects with secondary syphilis and the rapidity and thoroughness of repair in absolutely healthy patients. I have in several instances observed bad results in cachectic and intemperate syphilitic subjects. Such cases seem to be especially prone to necrosis and non-union. I have seen one case of necrosis of the humerus, following a fracture in a syphilitic subject, in a man who absolutely disregarded my advice and kept himself comfortably intoxicated for some weeks following the injury. This case finally went out of my hands, and I know nothing of its subsequent history. In another instance I observed non-union of a Pott's fracture in an intemperate syphilitic subject, but in both of these cases I attributed the unfavorable result to constitutional depravity induced by dissipation rather than to the syphilis *per se*. In the period of sequelæ, or the so-called tertiary stage of syphilis, operation-wounds and surgical lesions are liable to pursue an unfavorable course as a consequence of one or all of three conditions:

1. Profound syphilitic cachexia, due to the prolonged and secondary severe stage.
2. The abuse of mercury.
3. The condition that often prevails—alcoholism.

Operations about the mouth, naso-pharynx, and fauces during the active period of syphilis have, in my experience, been attended with some disagreeable results. Clean incised wounds are rarely made in operating in these localities, and it is well-nigh impossible to keep wounds of these parts in a perfectly aseptic condition, or free from irritation. Rest is also difficult to secure. In the case of the mouth and pharynx, the contact of the food and the movements of chewing and swallowing are sufficient not only to aggravate mucous patches and ulcers, but even in perfectly healthy individuals often serve to develop ulceration in wounds of these parts. In syphilitic patients, typically specific ulceration is apt to follow surgical lesions. Excision of the tonsils in syphilitic subjects has, in my experience, several times resulted in obstinate ulceration. An illustration of this has recently come under my observation. A gentleman that had been under my care for syphilis for nearly two years, but in whom no lesions had been observed for eighteen months, came to see me in regard to several ulcers on the inner surface of the lower lip. These had the appearance of typical gummatous ulcers, one of them being quite deep and ugly-looking. On inquiry I found that these ulcers followed a blow upon the mouth that caused laceration of the mucous membrane by the teeth at the site of the ulcers.

I have seen several cases in which laceration of the gums by the dental forceps, in the careless extraction of a tooth during the active period of syphilis, had caused ulceration of a typically specific character. In one instance I noted extensive ulceration of the palate, apparently precipitated by laceration of the gums in the removal of tartar. Crushing injuries are apt in syphilitics to be followed by ulceration of a typical character. I have seen several cases of onychia syphilitica, with loss of the nail resulting from crushing of the end of the finger.

Operations upon the cartilaginous and bony structures of the nose in syphilitic subjects are apt to be followed by slow healing, and perhaps ulceration of the operation-wounds. Lack of rest and the contact of irritating secretions in all such cases afford sufficient explanation. Bruising of the periosteum and bone is likely to be the determining factor in the production of a node. Ulceration and caries or necrosis are, of course, thus more likely to result than in syphilitic nodes and osseous inflammations occurring independently of traumatism.

In broken-down syphilitic cases suffering from operation-wounds and injuries, my experience has led me to exercise great caution in the exhibition of anti-syphilitic remedies, and I have come to regard the general condition of the patient, independently of his syphilis, as of much more importance than the old constitutional infection; in other words, I find much better results from treating the patient than from treating his syphilis.

The question of the influence of the syphilitic dyscrasia upon the repair of operation-wounds was brought to my mind not long ago by the protest of a physician against my operating upon a case of syphilitic necrosis of the tibia. The physician thought that an operation was unwarrantable, and that repair of the bone and of the operation-wound would not be likely to occur until the patient had had a thorough course of mercury and iodide of potash. The patient has not yet made up his mind upon the question of operation, but most practical surgeons will bear me out in the assertion that an operation will be the surest method of treatment for the patient's general condition.

A case in point is one in which I operated for central syphilitic necrosis of the tibia involving the entire shaft of the bone for about four inches. The question arose in council as to the propriety of operation until after vigorous anti-syphilitic treatment for a few weeks. I advised immediate operation, which was finally consented to. After removal of the necrotic bone I applied a fenestrated plaster bandage, put the patient upon cod-liver oil, and allowed him to go out on crutches. Repair was quite rapid, and at the end of three months the patient was able to get about without artificial support and had gained about twenty pounds in weight.

GUMMATA OF THE BICEPS BRACHIALIS, KIDNEY, AND EPIDIDYMIS, SIMULATING MALIGNANT TUMORS.[1]

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INSTANCES of syphilis involving either muscle or the kidney are sufficiently rare to justify the report of a case involving these parts, and also affecting the epididymis. At least two members of the profession, occupying prominent positions in St. Louis and Chicago, failed to make a correct diagnosis in this case, and advised operative procedure. A case of a somewhat similar nature recently passed through one of the hospitals of Paris, France, without a correct diagnosis having been made, and the true nature of the disease only became known by the bad practice of a charlatan, who applied a salve to the tumor on the thigh, causing ulceration. The tumor became no smaller, and the ulceration increased in size; under these circumstances the patient applied to the Hôpital Saint-Louis, where the syphilitic character of the ulceration was recognized and the tumor was dissipated by proper treatment.

The history of my case is as follows:

T. D. S., thirty-four years of age, on February 15, 1891, was brought to my office for consultation by Dr. Steenberg. The patient had passed through the hands of a number of medical gentlemen, who, without benefit, had given him medicine, and several had advised operative procedure. All had pronounced his case unusual and obscure. I obtained the following history: His father served in the war, came out of service with a running sore in his side, and died with something like consumption, aged forty-five years. His mother, fifty-one years of age, is living and in good health. Brothers and sisters are all living and healthy. The man had been ailing for about four years. He complained of pains in the bowels, and had some trouble with the bladder. He was relieved by injections of morphine. After an attack of this kind, small white lumps, like cheese, came from his bladder. These white lumps could be broken down between the fingers, and he was told that they were a kind of gravel. He had gonorrhea eight or nine years ago, but denied having anything like syphilis. This clap lasted about a month. A lump in the left testicle was the first of his present troubles. That appeared before he had the attacks of gravel; at one time it broke down and discharged. He has recently had no bladder-symptoms except frequent micturition. The tumor of the kidney on the right side was second in order of appearance, and has been called floating kidney, or consumption of the kidney. The third tumor was that on his arm; it appeared about a year ago, and has slowly increased in size. His greatest trouble at this time is soreness and partial paralysis of the arm, and frequent urination. He has no distinct chills, but at times has chilly sensations. He has never had any cough; there is no flushing of the cheeks; the skin is sallow and dusky; his bowels are constipated. He is married; has one boy, nine years old; his wife miscarried seven and five years ago, and has not been pregnant since.

His present condition is: height, 5 feet 10 inches; weight, 129 pounds; pulse, 94. He weighed 150 pounds before he was taken sick. The urine is of a light-straw color, acid in reaction, and contains no albumin or sugar.

[1] Paper read at Forty-first Annual Meeting of the Illinois State Medical Society, May 21, 1891.

In the belly of the left biceps brachialis there is a sharply defined tumor, 3¼ inches long. The circumference of the left arm over the largest part of the tumor is 10 inches; of the right arm at a corresponding point, 9 inches. The measurements of the left forearm show a diminution from ½ to 1 inch in all circumferences, indicating a certain amount of atrophy from disuse, and confirming the patient's statement of partial paralysis. The tumor is smooth, firm, freely movable, and easily defined; is not painful on pressure. There is considerable disability of this arm, as the man cannot get on his coat without assistance. There are no enlarged superficial glands in the axilla or elsewhere.

About 3½ inches above the spinous process of the right ilium there is a smooth tumor lying obliquely and apparently connected with the kidney. It is dull on percussion, slightly tender to the touch, movable, and measures about 3¼ inches long by 2 inches wide. Auscultation and percussion of the lungs show them to be normal. There are no other evidences of tuberculous disease. The liver is normal in size, but tender at the lower border. On turning back the prepuce a slight scar was found, and he confessed that he had had a sore there. There are no syphilitic nodes on the tibia, and no evidences of syphilis in skin or mucous membranes. The sight and hearing are good. The left testicle shows an enlargement of about the size of a large hazel-nut, which is connected more particularly with the epididymis. It is very hard and not painful to moderate pressure. The diagnosis was made of syphilis of the muscle, kidney, and epididymis, and I recommended treatment by inunctions of blue ointment and the internal administration of anti-syphilitic remedies. The reasons for this diagnosis were: first, the scar on the penis; second, Keyes's statement that syphilis appearing in the muscles elects the left biceps brachialis; third, the absence of all signs of tuberculosis in lungs and abdomen; fourth, the absence of the cachexia of malignancy.

On my recommendation the treatment was carried out by Dr. Steenberg, and he informed me that in about thirty days the tumor on the arm had softened, and was opened with the knife. Granular matter and a yellowish syrupy substance were discharged in large quantities.

I saw the patient March 22d, five weeks after treatment was begun. The left arm then was of the same circumference as the other, and there was still some of the typical discharge. This microscopically proved not to be tuberculous or actinomycotic. The cavity was cleansed, and at the last examination there remained only a minute sinus. The tumor in the right abdominal cavity was apparently diminished in size and was less movable. At the examination made April 27th, I found that the patient had gained 12 pounds in weight, and was feeling much better in every way. He has regained the use of his left arm, and can put on his coat without assistance. The swelling of the kidney has still further diminished in size. The frequent urination has entirely disappeared. The man was at this examination confronted with the statement and proof of the character of the disease. He stated that he did have a sore and discharge twelve years ago, but was told that it was the clap. He was treated by inunctions of some blue salve. The son, first seen at this time, is rather small for his age, has a large head, dry, lifeless hair, worm-eaten teeth, and rheumatic pains in the limbs.

The conclusions from a study of this case and the results of treatment are:

1. This man was undoubtedly affected with syphilitic gummata of the muscle, kidney, and epididymis, appearing ten years after the primary infection.

2. The first development of the disease was extremely mild, and beyond a very slight scar on the penis left no marks on any part of the body.

3. That the indifferent use of specific medication served to check the disease, and during the time of temporary quietude of the poison he was married and became the father of a son.

4. The son shows only slight manifestations of hereditary disease.

5. The disease afterward developing without treatment, his wife became affected, miscarried several times, and has finally ceased to conceive.

6. Despite the fact that no correct diagnosis of his trouble was made, and that proper treatment was not applied, the disease ran rather a slow course, and now as a result of proper medication the man bids fair to make a complete recovery.

The medical literature bearing upon the subject is so scanty, that I am led to make the following synopsis of articles that I have been able to collect.

M. Feulard[1] has reported the case of a man, thirty-seven years of age, who was afflicted with an enormous gummy tumor of the left triceps femoralis, which had been entirely cured by specific treatment. The tumor had existed for two years, and followed a slight traumatism. He entered a hospital, where amputation was advised. Frightened by this, he consulted a charlatan, finally entering the Hôpital Saint-Louis, where the form of the ulceration was recognized as syphilitic and properly treated. His wife remains healthy in appearance, protected by the law of Colles-Baumés. In the first three years of marriage she had three miscarriages; the fourth child, born eighteen months after the last miscarriage, is seven years old, and is distinctly hereditarily syphilitic.

R. Kohler[2] has reported a case in which a man with a peculiar growth in the left hypochondrium was operated on by eminent surgeons. The mass was at first taken for a tumor of the spleen and then for a sarcomatous growth of the walls of the abdomen. Finally the diagnosis of syphilitic gumma was

[1] La Semaine Médicale, 1891, page 54.

[2] "Diagnostische interessante Geschwulst," Deutsche militärärztliche Zeitschrift, 1890, p. 601.

made, the patient put on proper treatment, and cured.

Neumann's[1] patient, thirty-five years of age, thirteen weeks after infection presented in the muscles gummata that were not adherent to the skin. Six different muscles were affected. Some of these gummata suppurated, some were absorbed. There was no pain and no retraction after the disappearance of the growths. The movements of the muscles were in this case completely restored. These gummata appeared very early in the disease.

Bier[2] describes 121 cases of syphilis of the muscles, and says that they offer great difficulties in diagnosis. The clinical picture is very changeable and different. The point of predilection, he says, is in the sterno-cleido-mastoid; others say the biceps brachialis. These tumors frequently start from an injury. Bier warns us not to judge too hastily when specific treatment fails to cure these cases, because they often get well after all hope has been given up, especially when they have existed for a long time without treatment.

In Kohler's[3] case there were tumors that had the appearance of syphilis of the muscles, but which also contained actinomyces. The woman died from exhaustion, but the post-mortem examination left it in doubt whether or not there was a mixed infection of syphilis and actinomycosis.

Schnitzler[4] presented to the Imperial-Royal Society of Physicians at Vienna a case of this sort, very interesting from a diagnostic point of view inasmuch as the different eminent authorities that had examined it differed widely in their views. There was a growth on the tonsil and palate that Schnitzler and others thought was cancer, but Kaposi, Billroth, and most of the members diagnosticated syphilis.

Bramann[5] presented to the Berlin Medical Society two patients with syphilitic tumors in the muscles and stated that these tumors usually appear in the latest stages of the disease, twelve to twenty years after the infection. They are often difficult of diagnosis, being near the bone, so that many think that they arise from the periosteum, but oftener they are in the middle of the muscle. In one of the cases presented there was a tumor in the side of the neck, and another in the region of the clavicle. This case presented no other signs of syphilis. In the second patient there was a so-called myositis fibrosa, the tumor extending from the base of the skull to the clavicle. The patient was forty years of age, and was infected fourteen years previously. Both were cured by specific treatment.

Köbner[1] presented to the Dermatological Society of Berlin a patient, aged fifty-eight years, suffering with syphilitic disease of the muscles that had existed for eleven years. The left sterno-cleido-mastoid was diseased in its entire length, especially near the clavicle. The muscle was prominent, hard, and painful.

Spontaneous pains, especially at night, did not exist. The corresponding muscle on the right side was only diseased in its lower third, where there was also a tumor. These tumors developed gradually. The patient had been married twenty years, and had borne nine living children. She was infected by her husband, who had a chancre twenty-three years previously, but no further evidences of the disease. She was cured in three months.

Karewski[2] states that in the muscles of the tongue, in the testicles, and in the mammæ, syphilitic tumors occur of which the diagnosis offers certain difficulties. They are especially worthy of the study of the surgeon, because they are usually mistaken for the malignant tumors that have their seat of predilection in these organs. Especially weighty is this question when the new-growths attack the muscles of the skeleton, in which, if malignant, they would require extensive operations, while, if a correct diagnosis is made, they can be easily dissipated. No muscle is free from this disease. The sterno-cleido-mastoid was affected most commonly. The diagnostic point is the well-marked border. These tumors can be accurately defined from the surrounding tissue. Exacerbations of the pain often occur at night. Traumatism often causes the growths. The disease, when seen in the tongue, is most frequently mistaken. In the testicle the differentiation from tuberculosis and cancer is not easy. Syphiloma of the mamma is the least common, but Karewski has seen an example in the male mamma, and has removed the condition by proper medication.

According to M. Mauriac,[3] syphilis can attack the kidney at all periods of its evolution. The lesions are similar to those of Bright's disease; they rarely assume the form of gummy tumors. Syphilis of the kidneys may appear early or late in the disease. When early it corresponds to the acute infectious diseases—that is, it is parenchymatous. The chronic forms are more grave and do not respond as well to treatment.

Tommasoli[4] has seen changes in the kidney dur-

[1] Syphilitische Erkrankungen der Muskeln.

[2] "Beiträge zur Kenntniss der Syphilome der äusseren Muskulatur," Mittheilungen aus der chirurgischen Klinik zu Kiel, 1888, Band iv.

[3] "Muskelsyphilis und Aktinomykose," Charité Annalen, Jahrgang xiii, p. 909.

[4] "Tumeur maligne ou Syphilis?" La Semaine Médicale, 1888, p. 487.

[5] Deutsche med. Wochenschrift, 1889, p. 92.

[1] Deutsche med. Wochenschrift, 1888, p. 705.

[2] "Ueber chirurgische wichtige Syphilome und deren differential Diagnose," Berliner Klinik, 1889, Heft 18.

[3] "Syphilose des Reins," La Semaine Médicale, 1886, p. 547.

[4] "Sifilide dei Reni," Archiv Ital. di Clin. Med., Juni 30, 1888.

ing all stages of syphilis; sometimes the symptoms of Bright's disease were present, sometimes only albuminuria. Anatomically he has also seen the greatest variety of pathological conditions, excluding amyloid degeneration. He makes two groups: one occurs in the first year of the disease, the result of an acute syphilitic intoxication; in these there is less tendency to chronicity and the prognosis is better. The second group covers the whole series of chronic interstitial inflammation of the kidneys, the course and time of appearance of which vary extremely. Mercury and potassium iodide and diet are recommended in their treatment.

O. Pinner[1] states that syphilis may occur as a distinct disease of the epididymis. The tumors that form vary from the size of a bean to that of a nut, and are as hard as cartilage. This disease is not frequent, having been observed in thirteen of 2200 cases of syphilis.

C. Schadeck[2] states that syphilitic disease of the epididymis was first described in 1861 by Engelstaedt. It occurs without involvement of the testicles and in the early as well as the late stages of the disease. It occurs most commonly from one to five years after the infection—at the same time as the other forms belonging to the condylomatous period. tact. It is seldom that orchitis is followed by epididymitis. Syphilitic epididymitis begins with a swelling that is soft; later it is hard, and attains the size of a plum. It may attack one or both sides, but seldom both. Its course is very tedious.

NOTE.—Since the foregoing was written a case of syphilitic disease of the kidneys has come under my notice and deserves to be placed on record. The man was seen in consultation with Dr. L. C. Taylor, of Auburn, Ill., August 15, 1891, and has since been under his care.

C. R., thirty-six years of age, a horse-trainer, with a good family history; he was not intemperate; the pulse and respiration were rapid. The abdomen was largely distended and respiration in consequence greatly impeded. The scrotum was edematous and as large as a child's head. The lower extremities were swollen almost to bursting. The urine was nearly solid with albumin, and a large number of tube-casts were found by both Dr. Taylor and myself. Over both tibiæ were large brown scars, with a history of chronic ulcers in the same situation some two years previously. These led to the diagnosis of syphilis, which was confirmed by the patient's confession and by a small linear scar on the dorsum of the penis. The patient had denied syphilis to Dr. Taylor, who suspected it, and so had not had specific treatment. The condition of the patient was apparently so desperate and the prognosis so unfavorable that we did not make as accurate notes as would now be desirable. The patient states that he had syphilis some fifteen years previously, and has had no secondary symptoms. The ulcers on the limbs were treated by means of potassium iodide, and were cured after a long siege, but neither he nor his medical attendant suspected syphilis. The diagnosis of specific disease being safely established, the man was put on mercurial inunctions and injections and anti-syphilitic treatment. Multiple punctures were made in the limbs and scrotum. In a few days the periosteum of the left tibia became very much swollen in two places, and incisions being made a large quantity of serum was drained off, reducing the limb to about the normal size. Only one hypodermatic injection of mercury was given, because of the condition of the skin. Mercurial inunction was faithfully kept up. Dr. Taylor informs me that the man's condition has constantly improved. The tube-casts have disappeared and the percentage of albumin has diminished until only about ten per cent. remains. His appetite is ravenous and the prognosis for a complete recovery very promising. He was about and attending to his business within sixty days after the consultation—at which time death did not seem more than a few days distant. This case proves that so-called Bright's disease of the kidneys may be of syphilitic origin, and that specific disease should be sought for in all cases of this character.

[1] "Ueber Epididymitis Syphilitica," Berliner klin. Wochenschrift, 1884, No. 41.

[2] "Zur Kasuistik der syphilitischen Erkrankungen des Nebenhodens," St. Petersburger med. Wochenschrift, 1885, No. 52.

ON THE TEACHING OF ANATOMY TO ADVANCED MEDICAL STUDENTS.[1]

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THE importance of anatomy to the physician and surgeon has caused the method of teaching this science to be largely determined by practitioners. The student is taught the elements of histology, the shapes and numbers of organs, the outlines of regions, and their mutual relations. Other facts than those named belong in a very remote degree to the needs of practice; and when the great number of medical topics is considered, which is of necessity brought to the attention of the student, it is no wonder that governing bodies are disposed to disregard all phases of instruction that do not have direct claim upon the physician's time and service.

But science is rarely pursued for practical good. The acquisition of knowledge for its own sake—the determination of general principles that reveal the existence of law—awakens and maintains pleasures and interests in the mind of the anatomist compared with which the practical uses that he can make of the knowledge appear to be poor and mean. With as much propriety one might say that navigation is the highest use that can be made of the study of

[1] Read before the Association of American Anatomists at its third annual meeting at Washington, D. C., September 24, 1891.

astronomy, as to assert that the chief end of the study of anatomy is to apply its tenets to medicine. These statements are made not to lessen the dignity and importance of practical work, but respectfully to claim that such work does not comprise all the value, or even more than a small fraction of the value, that pertains to the whole.

In his *New Atlantis*, Lord Bacon says: "We have three of our fellows that bend themselves, looking into the experiments of others, and cast about how to draw out of them things of use and practice for man's life, and knowledge, as well for works as for plain demonstration of causes, means of natural divinations, and the easy and clear discovery of the virtues and parts of the bodies. These we call dowry-men or benefactors. Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms. These we call the interpreters of nature."

I hear a response to the foregoing statement that the structure of animals exhibited on a broad scale is already taught to classes in the scientific schools, and that, in the scheme of a university education, the biological subjects are as well advanced as any others in the curriculum. This is an imperfect, if not misleading, presentation of the facts. It is true that the rudiments of the structure and functions of animals and plants are taught. But to students already advanced by general training and by preliminary work in natural history, little is presented that prepares them to discuss the more intricate problems.

To my mind the scheme of university work is unsatisfactory until opportunity is afforded to men, who, after completing their biological and medical training, may desire to still further advance. Conceding that the question of maintenance has been settled, either by the possession of private means or by endowment of fellowships, what courses of instruction are afforded these advanced men? As a rule, nothing, or next to nothing. It is customary for such novitiates to reside abroad for several years, where amid numerous centers of learning are found one or more masters, the disciples of whom they become. The advantages of travel being considered, it may be said that with the comparatively easy means of obtaining the best instruction the present scheme is on the whole adequate. With such a conclusion I cannot agree. If it were true, we might in reason have stopped long ago in our lines of university expansion. Independence in intellectual as well as in political life should be the object of American citizenship.

First, and always, let us remember that medical investigators are those it is desired to train. It is for men that are already imbued with the desire to pursue their researches in anatomy that I appeal. They stand in this field with what preparations can be given them for usefulness. They are medical biologists—medical anatomists. They are not restricted to the problem of the relief of suffering, and yet they are occupied with those other problems upon which the true solution of all depends.

For such instruction I would have a specially-designed museum and a specially-equipped laboratory. It may be assumed that in every great medical school, from among the large number of matriculates (men already trained and of the best quality), two or three of the type described will present themselves for an advanced course in anatomy. I am prepared for the objection that this is too large a number. But, so far as I know, no one has attempted to ascertain how many men in each class of graduates would come forward, and my impressions are based upon the number of workers in the general field of biology—some of whom, at least, would have pursued these or similar studies had any systematized course been presented to them. I will, therefore, begin with three men a year. To this number may be added as many young teachers, tutors, curators, and prosectors, who would avail themselves of the instruction. The work might be initiated in either of the halls of biology or of medicine. If the course were well established, it would be well to institute a laboratory and museum distinct from any on the university grounds. I am of the opinion that the administrative success of such separation of collections would be assured. All must approve of the ethnological collection of Harvard being distinct from the Museum of Comparative Zoology, and of both in turn being set apart from the museum in the Medical School. In like manner I assume that there is no reason why series of specimens arranged in illustration of principles that are not taught either in the preliminary or in the proper medical courses, should be necessarily connected with one or the other museum. The collections should be in the main designed to accommodate the preparations that are used in the illustration of general lectures. Museums that teach by the specimens being removed from the cases to the lecture halls are radically distinct from museums that teach by the conservation of series that are arranged and labelled for instruction as they stand, and which should be rarely, if ever, disturbed.

The following, treated in some detail, embrace the topics that occur to me at this time as appropriate subjects for instruction: The study of the human brain; especially the study of the mammalian and avian brains, both of the gross and the minute anatomy, the localization of functions, etc. The study of muscular anomalies and their homologies in the normal myology of the vertebrates. The study of animal locomotion and its

application to the morphology of the vertebrate limb, and in general the application of photographic methods in studying animal locomotion.[1] Studies in craniology, especially the comparative studies of human and mammalian crania. The study of osteological variations, with a similar application to the normal anatomy of the lower animals and the beginning of morbid processes. The study of nutritive processes on tissue as correlated to age.[2]

In addition, courses of experimental morphology might be essayed. Such investigation could be encouraged without encroaching on the domain of physiology, as the votaries of this science somewhat arbitrarily restrict it. Indeed, much of the study of animal locomotion would be experimental, as would also be the study of protoplasm in viscid media, under rotation, compression, etc. The effects of light, temperature, water in motion and at rest, etc., on organization, would naturally find a place. Experiments on mutilation of embryos might also be undertaken.

Lectures on correlation of structure, on vegetative repetition, on the relation existing between phyllogenetic and teratological processes, could be given, as well as the study of the laws of heredity, especially in attempting to answer the question of the transmittal of acquired characters.

The teeth are so responsive to the constitutional peculiarities of the individual that their peculiarities can be seen and readily detected. The method of procuring accurate impressions can be applied and the plans of preserving the form of teeth be easily accomplished.

As is known to the zoölogist, the parts involved in the act of mastication are important in the classification of the mammalia, the slightest departure in the form, number, position, and rate of development of the teeth being for the most part correlated with other variations in the economy, while the shapes of the lower jaw and of those portions of the skull that afford surfaces for attachment of the masticatory muscles are of importance. No structures of the body resemble the teeth in the character of their response to morbid impressions; no other organs are arranged in progressive series; and none other than these are evolved after birth. Hence the effects of disease and accidents to which the teeth are subjected are sure to be recorded in the shapes of the crowns and roots.

If the student of heredity were to have placed at his disposal a collection of the casts of the permanent teeth of three generations—that is to say, of the parent of the subject, the subject himself, and the children of the subject—and if a clinical history were secured of the diseases and accidents that these persons had incurred, a tenable argument might be established as to the significance of the contrasts or resemblances in the forms of the teeth.

Thus, if three generations were expressed by the letters A, B, C, and if B is the subject of an acquired character (let us say from scarlet fever or measles), the new form of structure seen in the second and third molars may be transmitted to C. But in order to prove this it is necessary to know the peculiarities of these teeth in A. Hence, the teeth of the ancestors and descendants of the person who exhibits the acquired character must be known. A somewhat similar plan of observation could be made on the teeth of the lower animals. It is strange that those teeth with endless pulps, in which growth is rapid and interference with their relations causes permanent records to be made in malformation, should not have been used in studies of nutrition.

In connection with myological studies a number of minor problems suggest themselves; such, for example, is the nature of white and red muscles. It has been noted that in ostriches that have been confined in zoölogical gardens the muscles of the leg undergo fatty degeneration and become white in color; it is also known that the pectoral muscle in many of the gallinæ is white, presumably from the fact that they are used but for short and infrequent flights. How evident is the conclusion that a systematic study of all muscles of active birds living in enforced confinement, as compared with the relatively active muscles in feral forms, might be undertaken with a fair prospect of throwing light upon the nature of the process, and with a hope that the subject of fatty degeneration (even if by this method not elucidated) may have its study placed on a broad basis by subjecting its tenets to the tests of systematized experiment and observation!

The morphological study of the results of diseased action might also be undertaken. The differences that obtain between normal individuals and those the subjects of hereditary disease must be of importance to the anatomist and the pathologist.

[1] Instantaneous photographs have given us definite conceptions of the behavior of the manus and pes in terrestrial and aërial movements. I had the honor to point out as a result of a study of the negatives taken by Mr. E. Muybridge under the auspices of the University of Pennsylvania, that the ground is touched by the outer border of the foot and is left by the inner border, and that the impact represented by this transition is expressed by an oblique line that extends from without inward (ecto-entad) across the metapodium. Prof. H. F. Osborne by studying the carpus and tarsus in extinct forms of mammalian life has found that this conclusion is of value in studying the evolution of the parts. From this we can conclude that, as a result of a photographic plant in connection with advanced anatomical work, discoveries could with some confidence be anticipated.

[2] This would form a morphological study on the nature of age, and would more particularly embrace a consideration of the immature and senile forms as compared with the typically adult, as well as the retention of juvenile characters in the adult.

The variations in the forms of the bones, as found in medical museums, are of a character that suggest their relation to inherited causes. Every clinical observer has noted the peculiar shape of the chest in families in which pulmonary phthisis is hereditary, even though the special tuberculous deposits are absent in some of its members. The clubbing of the finger-nails is a sign of the same disposition. Some writers, indeed, claim that in this class of subjects a special arrangement of the fibers of the pneumogastric nerve exists. Are these and similar morphological characters susceptible of being also gathered so as to contribute to the discussion of the transmission of acquired characters? Are not opportunities here presented for the medically trained biologist to study the subject of heredity in a line so important and, alas! with material so abundant? Other hereditary diseases, such as struma, syphilis, and gout, are less strongly marked than is the tuberculous, but even on this obscure horizon landmarks are detected that are of sufficient definiteness to guide the observer to well-defined plans of study. The animals of zoölogical gardens exhibit examples of acquired struma, the effects of which more especially distinguish the skeleton. Can any of these characteristics be transmitted? How would the skeleton of a tiger, let us say, born in captivity in the third and fourth generation differ from that of a feral type? After what manner may one expect taxonomic characters modified in these generations of prisoners?

The nature of malignant growths, it is not improbable, would find a solution in a line of research based upon a similar proposition. What proportions of malignant growths, such as the sarcomata, are met with in the feral state of quadrupeds as compared with those in the domesticated or the captive state? Can experiments be devised by which we may expect to cause these growths to appear by creating the favoring conditions? Can we study the genesis of the sarcomata to better advantage than has hitherto been done, by outlining the biography, the lineage, and to some extent possibly the destiny, of these tumors, by applying to them experimental methods of research?

Medically trained men are not apt to become pure morphologists. The underlying thought is of *function* through which *structure* is modified. In its best sense, therefore, Physiological Anatomy is the branch of science that would be most developed. Let us suppose that John Hunter had lived in 1891 and had essayed his work by all the aids of modern science, and had undertaken a plan of investigation for the continuation of his labors: might he not have accepted some such scheme as I have here feebly attempted to portray? With the admiration we feel for his genius, let us not only have Hunterian orations, but in each medical center a Hunterian laboratory and a Hunterian museum.

"I am so utterly opposed to those cloud-builders who would divorce physiology from anatomy," says Haller, "that I am persuaded that we know scarcely anything of physiology that is not learned through anatomy." (Quoted from R. Cresson Stiles's *Life and Doctrines of Haller*, New York, 1867.)

In Solomon's House in the *New Atlantis*, in which Bacon essayed a scheme for intellectual advancement, we read of "parks and enclosures of all sorts of beasts and birds, which we use not only for view or rareness, but likewise for dissection and trials, that thereby we may take light what may be wrought upon the body of man; we have also particular pools where we make trials upon fishes, as we have said before of beasts and birds."

I hear objections that this scheme is visionary and impracticable. How is the money to be obtained by which it can be rendered feasible? Where is the teaching-force to be recruited? My answer is that if the need of establishing such a course be acknowledged, the accomplishment of the end in view is no more difficult than in any other branch of pure science. A few years ago the establishment of seaside laboratories would have been thought chimerical. Now they are assured successes.

If I am told the results obtained will appeal to but few, I reply that important projects must be supported in proportion as they so appeal, until such time as they shall have proved their right to exist.

CLINICAL MEMORANDUM.

A CASE OF GLANDERS.

BY WILLIAM S. BARKER, M.D.,
FORMERLY ASSISTANT PHYSICIAN AT THE ST. LOUIS CITY HOSPITAL, ST. LOUIS, MO.

L. W., colored, eighteen years of age, has been employed removing ashes, slops, etc. He entered the City Hospital November 17th. His mental status was quite low, so that his previous history was scarcely obtainable. There was no evidence of any venereal disease, and he gave no history of injury. He stated that two weeks previously to his admission he first noticed a swelling on his forehead over the frontal sinus; that considerable coryza soon set in; that he picked at the swelling, which increased and soon involved adjacent parts. On his admission, some days later, there were irregular nodules about the central and lower parts of the forehead. These proved to be pockets of pus, the skin being intact over them. There was much edema about the eyelids, extending to the nose and cheeks. There was a small break in the skin over one of the nodules on the forehead, and, by pressing upon the swollen parts below, pus was forced through this opening above, showing rather extensive purulent infiltration. It seemed that systemic disturbance had not been very

great heretofore, but it became so now. The temperature was 101°. Two days after his admission the man complained of pain and of impaired function at the right elbow. On examination a small semi-fluctuating swelling was found on the flexor side of the right elbow. The temperature next day rose to 104°, and his condition became steadily more aggravated. Pus was found in the swelling at the right elbow. Two days later peculiar pustules appeared in various parts of the body, varying in size from that of a pin-head to that of a five-cent piece. The numerous lesions were all covered with epidermis and extended quite deeply, containing a milk-like pus. These were incised. The older lesions on the forehead and nose had now assumed a very repugnant character, the tissues all steadily sloughing away in a horrible manner. Latterly delirium was pronounced. The patient died November 28th. On post-mortem examination one lung presented an extensive purulent focus. Dr. Bremer, of St. Louis, made a microscopic study of the contents of the pustules and confirmed the diagnosis of glanders.

MEDICAL PROGRESS.

Surgical Treatment of Pulmonary Gangrene.—OEHLER (*Münchener medicin. Wochenschr.*, No. 41, 1891, p. 723) has reported the case of a robust man in which pulmonary gangrene developed in conjunction with pleuro-pneumonia. As at the end of two and a half years the man's forces were progressively failing, the dyspnea increasing, with recurring rigors, an exploratory puncture with a hollow needle was made, but with no result. Shortly afterward the patient was anesthetized and the seventh rib resected at the point at which the signs of the existence of a cavity were most distinct. In the course of the operation the pleura was opened, and pneumothorax resulted. The operation was suspended, a drainage-tube was placed in the wound, and a firm bandage was applied. The man recovered promptly, and in the course of a few days the pneumothorax had disappeared. At the end of four weeks an incision was made at the site of the first operation, the now adherent pleura and the lung to a distance of two inches entered by means of a Paquelin cautery, but further interference was interdicted by the occurrence of severe cough and asphyxia. In the course of two days pus from the pulmonary cavity began to flow through the drainage-tube placed in the wound. The cough subsided and soon ceased, the offensive odor of the sputum disappeared, and the patient steadily gained in weight and strength. The discharge of pus from the cavity gradually grew less and less, and the drainage-tube was successively made shorter and smaller; but as soon as it was removed the fistula closed, and cough and expectoration returned. Resection of a rib and enlarging the cavity were practised in the hope of effecting closure, but to no avail. The fistula persisted. The patient, however, remained strong, and was able to do light work a year and a half after the opening of the cavity.

A Modification of the Treatment of Lupus by Tuberculin.—At a recent meeting of the Hamburg Society of Physicians, UNNA (*Deutsche med. Wochenschr.*, No. 44, 1891, p. 1224) presented two cases of lupus in which he had practised a modification of the Koch method of treatment, utilizing the tuberculin necessarily present in the bodies of the patients. The affected parts were covered with plaster, preferably of a kind exerting a favorable influence upon the disease, such as zinc-sublimate-plaster gauze or salicylated-creasote-plaster gauze, and then manipulated by massage. The procedure had been employed in ten cases. In the course of twenty-four hours the manipulation was followed by pallor of the diseased area, and upon repetition of the massage the characteristic reaction of tuberculin appeared.

A Large Varix of the Left Ary-epiglottic Fold.—JUFFINGER (*Wiener klin. Wochenschr.*, No. 42, 1891) has recorded the case of a man, sixty years old, with the symptoms of catarrhal laryngitis, in whom, on laryngoscopic examination, a tumor as large as a pea was found near the middle of the free margin of the left ary-epiglottic fold. The tumor was distinctly separated from its surroundings and was provided with a short pedicle. Its surface was smooth and spherical, and bluish in color. On deep inspiration the tumor was seen to be mobile and continuous inferiorly with a large vein coursing along the lateral wall of the larynx. The tumor was removed by encircling its pedicle with a wire loop, which was cautiously tightened during the passage of a galvanic current. The subsequent hemorrhage was slight and was controlled by the use of ice pills. The tumor, when removed, proved to be a quarter by a sixth of an inch in size, and histologically to consist of a congeries of dilated veins.

"Europhen," a Substitute for Iodoform.—VULPIUS (*Deutsche medicin. Wochenschr.*, No. 44, 1891) reports the results of a tentative employment of europhen at the surgical clinic of Czerny, at Heidelberg. Europhen is a fine pulverulent body, without decided or disagreeable odor, one-fifth as heavy as coarsely-powdered and less than half as heavy as finely-powdered iodoform. The agent possesses the advantage over iodoform in being readily soluble in alcohol, ether, chloroform, and benzin, and in less degree in fats and mineral oils. Europhen is not a single body, but is constituted principally of kresol-iodide and an inconsiderable proportion of an iodine combination soluble in water. Europhen possesses distinct antiseptic properties, and is but feebly toxic. Pain or eczema only exceptionally followed its application. Like iodoform, europhen occasionally formed crusts. The powder stimulated granulation, the granulations, however, displaying an undue tendency to bleed.

Gangrene Induced by Carbolic Acid.—In an inaugural thesis FRANKENBURGER records the observation that in susceptible individuals the protracted application of carbolic acid (even in dilute solution) causes a form of dry gangrene in those parts of the skin (even though uninjured) with which the acid comes in contact. The gangrene is caused by vascular stasis and thrombosis that are dependent upon a destructive action upon the red and white blood-corpuscles.—*Münchener medicin. Wochenschr.*, No. 43, 1891, p. 767.

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SATURDAY, DECEMBER 26, 1891.

THE TREATMENT OF INFLUENZA.

LEESON (*Brit. Med. Journ.*, December 5, 1891) urges that isolation be resorted to as a preventive measure against influenza. He claims to have been successful in excluding the disease from a colony of three hundred persons constituted by the inmates and staff of an orphanage at Twickenham. The children were not allowed to go to church, the officers were prevailed upon to keep within the walls, and all visiting was prohibited. The disease exists on all sides, but the orphanage had thus far escaped.

He quotes BOLTON in fixing the incubation-period at five days, and believes that the disease is most readily transmitted in the earlier stages, so that a week of isolation (of the sick) will be sufficient. It is evident, however, that isolation of the well —the method so successfully adopted by LEESON at Twickenham, and by TRUDEAU two years ago at Saranac—will have to be kept up during the entire epidemic period, and that it is only practicable in institutions.

LEESON'S practice of giving "antipyrin in twenty-grain doses every four hours," while it may, as he states, have "a magical effect upon the pains," carries its own condemnation in his next sentence: "The treatment for the subsequent debility during convalescence is unsatisfactory."

This treatment was exceedingly popular during the pandemic of 1889, and was successful in achieving an unprecedented mortality. It is as irrational as it is dangerous. Influenza, whether directly by the action of the infectious agent, or more probably indirectly by the action of a toxic metabolin developed and retained in the system, is a depressing disease. It lowers vital energy. The indications are to favor elimination of the noxæ by stimulating all the emunctories, and to administer such agents as will reinforce the vital energy. Antipyrin and its congeners check excretion and depress vital force. They are thus directly antagonistic to the *vis medicatrix naturæ*, and directly synergistic to the toxic agents of the disease. It can hardly be doubted that many of the sudden deaths, and much of the undue prolongation of the course of a usually rapid disease, may be ascribed to the action of these drugs. They likewise retard convalescence and increase the liability to dangerous sequelæ.

There is no specific against influenza; but the derivatives of cinchona and of salicin seem most nearly to act as specifics. Cinchonidine salicylate, in doses of five grains repeated every second, third, or fourth hour, is of decided utility. Rest is important even in the milder cases. The diet should be simple, supporting, easily digestible, and readily assimilable. Carbohydrates should be given, preferably predigested, as in peptonized milk gruel, or as alcohol. The frequency of feeding, and the quantity of food, should be governed by circumstances. The skin, kidneys, and bowels should be kept in a state of healthy activity—by simple means, if possible. Niter, sodium benzoate, and spirits of nitrous ether, are among the best diuretics and diaphoretics. In a strong patient, at the beginning of an attack, the attempt to abort by profuse diaphoresis may be made—and, if free perspiration cannot otherwise be brought about, pilocarpine guarded by digitalis or strychnine may be employed.

The heart and nervous system should be sustained with strychnine. If indications for decided stimulation of the kidneys exist, either in previous disease or in present tendency to pleural or other effusions, cocaine, digitalis, caffeine, or sparteine may be added. Cocaine may find additional indication in gastric irritability, or in a tendency to subnormal temperature.

Antipyretics have no indication. The tempera-

ture is never in itself dangerous, and rarely rises so high as to cause serious discomfort. Cool or tepid sponging will usually afford relief from such discomfort as may, in a few cases, be experienced. Should there be exceptional cases of persistent high temperature, the ice-bag or other means of applying cold could be employed. Coryza, if troublesome, may be relieved by the administration of atropine or by the topical application of cocaine or menthol.

Laryngeal inflammation is a noticeable feature of the present epidemic. Edema demands scarification and hydragogue catharsis. Simple laryngitis is best treated by inhalation from steaming water of equal parts of compound tincture of benzoin and paregoric.

Pulmonary complications are not so serious or so frequent as in the recent epidemic. Counter-irritation, the ice-bag, or the poultice, followed by the cotton or wool jacket, and the internal administration of ammonium salts or terebinthinate preparations, constitute the best method of treatment. Ammonium salicylate is especially useful. In pneumonia we have seen much benefit from inhalation of ethyl iodide, as advised by BARTHOLOW. Pleuritis, pericarditis, and endocarditis are encountered, but the general treatment needs only obvious modification to meet the special symptoms. Blisters over the heart are useful. Acute rheumatism is prevalent, and appears to be modified by the epidemic influence. Blistering around the inflamed joints and over the heart may be advised; the administration of alkalies, followed by quinine salicylate, or in anemic cases, instead of alkalies, tincture of the chloride of iron, with strychnine hypodermatically in a decided dose, once daily, is useful. In cases presenting grave symptoms of whatever nature we advise inhalation of recently-prepared oxygen.

Pain does not furnish sufficient indication for antipyrin, phenacetin, and the like, to overcome the counter-indication afforded by their depressing properties. Opium preparations, especially codeine, or cocaine, or guarana, or even sodium bromide guarded by caffeine or by guarana, will usually relieve the headache, if the general measures already detailed do not accomplish this. In addition to these drugs, cannabis indica, hyoscyamus and its derivatives, compound spirits of ether, camphor and its bromide, and cold or hot local applications will be found useful in the relief of pain, when special treatment of that symptom is necessary.

The quick relief afforded by the coal-tar products is undoubtedly a great temptation to the physician who sees only what is immediately before him; and certainly many patients escape unfortunate consequences. Nevertheless, we must repeat that there is always danger, and that some of those escaping with their lives are so depressed that convalescence is unduly protracted, and the liability to morbid epiphenomena increased. The temporary apparent good is purchased at the price of much concealed evil. The management of convalescence is no less important than skilful treatment of the attack and its complications. Undue exposure must be avoided. Strengthening food and some simple tonic, such as tincture of nux vomica, or compound tincture of cinchona or fluid extract of coca should be given; or, if indicated by anemia, an arsenical or chalybeate preparation may be used for a few days or weeks or months, according to circumstances. After a severe and complicated attack climatic change may be desirable. Individuals known or suspected to be predisposed to tuberculosis should be kept under careful observation, and appropriate measures of prophylaxis should be instituted.

INFECTIOUS DISEASES OF SWINE.

THE subject of animal sanitation is deserving of the gravest consideration. The diseases of domestic animals, especially those communicable to man and those transmissible from animal to animal, bear an important relation to the health of the people and to the agricultural prosperity of the country. A thorough knowledge of the causes of these diseases and of their mode of propagation is absolutely essential to the intelligent and effective application of measures for their prevention. The national importance of this question has led the Government to institute scientific investigations of infectious diseases of animals, occasionally by commissions and permanently by the Bureau of Animal Industry. For several years this bureau has been engaged, in connection with its other duties, in investigating infectious diseases of swine. The results of these inquiries are summed up in a special report by DR. THEOBALD SMITH, and go to show that swine-plague and hog-cholera are two independent infectious diseases, each caused by an easily-recognizable specific disease-germ.

The frequent association of both hog-cholera and swine-plague in the same herd, and the occasional coëxistence of the bacteria of both diseases, as well

as of their respective lesions, in the same animal, have surrounded the investigations with difficulties and have often led to conflicting inferences. It is now claimed to have been well established by these recent experiments that the swine-plague is due to specific bacteria, and is identical with the disease *Schweineseuche*, prevalent in Germany. LÖFFLER first discovered the bacteria of *Schweineseuche* in 1885, but it remained for SCHUETZ to establish this disease in a more definite manner by his investigations conducted in the same year. Since then it has been generally recognized as a distinct infectious disease. In this country the differentiation of swine-plague and hog-cholera as distinct infectious diseases, though made possible by the investigations of the Bureau of Animal Industry in 1887, has not been thoroughly demonstrated until the present time.

SMITH has pointed out important morphologic, biologic, and pathogenic differences between the swine-plague bacteria and hog-cholera bacilli. The lesions in swine-plague are primarily and chiefly in the lungs, though the intestines may be, and often are, affected. In hog-cholera the primary disease is in the intestines, with secondary localization in the lungs. Bacteria similar to those causing the swine-plague have been found in the upper air-passages of healthy swine, cattle, dogs, and cats, but they possess a relatively feeble influence. It is highly probable that the disease-producing power of these germs is restrained by the absence of certain essential conditions, as susceptibility of the subject, suitable nidus for development, unhealthful modes of existence, and the peculiar environment to which the swine are subjected. As to the mode of infection, it is probable that the bacteria are introduced into a herd by infected animals, since the bacteria are speedily destroyed in soil and water. When once introduced, the spread of the disease throughout the herd is rapid. The manner of keeping the animals, age, breed, feeding, and the presence of parasites, all contribute to the production of a condition of susceptibility. Atmospheric conditions and the degree of virulence of the specific bacteria also have an important influence.

The means of prevention lie in the careful selection of stock and in the observance of rigid sanitation. When the disease has actually appeared, its spread is to be prevented by the adoption of the following measures:

1. Removal of still healthy animals to uninfected grounds or pens as quickly as possible.
2. Destruction of all diseased animals.
3. Careful burial or burning of carcasses.
4. Repeated thorough disinfection of the infected premises.
5. Great cleanliness, both as to surroundings and as regards the food.

It has not been demonstrated that the flesh of animals suffering from the plague is injurious to man, and therefore the question of its extinction is at present primarily a pecuniary one. The presumption is, however, that the flesh of such diseased animals should, upon general principles, be discarded as unfit for human food, and the law should so proclaim. The investigations of the Bureau of Animal Industry have led to decided advances in our knowledge of infectious diseases of swine. It is not claimed that the subject has been exhausted by these researches, but only that sufficient information has been obtained to enable a diagnosis to be made between the two principal infectious diseases to which our swine are subject, and to aid in the further study of the subject.

REVIEWS.

HUMAN MONSTROSITIES. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania, and GEORGE A. PIERSOL, M.D., Professor of Histology and Embryology in the University of Pennsylvania. Large folio, 13 x 17 inches. In four parts, to contain about 150 pages of text, with 39 full-page photographic plates from nature, and many engravings. Price per part, $5. Limited subscription edition. Part I, pages 1–88, plates I–VII. Philadelphia: Lea Brothers & Co., 1891.

THE first part of this superb work can call forth little but praise from the conscientious critic. As a beautiful example of the art of printing it will at once strike and hold attention. The illustrations also stand out with a clearness and precision that at once please the eye and the scientific understanding.

The subject of teratology has long needed re-shaping and re-classification by the modern scientific intelligence, and the medical profession is to be congratulated that such competent men as Professors Hirst and Piersol have put their hands to the task. Up to the present time the best works on the subject are to be found only in the French or German language. Most of the material that has here been used for illustration has been taken from the rich collection of the Wistar and Horner Museums of the Medical Department of the University of Pennsylvania. In text and illustration, therefore, the work may justly claim a high degree of originality.

The classification of Saint-Hilaire has been used as a basis, with such departures and changes as are due to the great advances in embryology made since the time of the French author.

Especially valuable seems the *résumé* of the work done by numerous investigators in experimental or artificial teratology—a subject most difficult to make clear, because of its inherent mystery, but particularly because of the incomplete and inconclusive results so far obtained. Direct mutilation disregarded, violent agitation, marked variations in temperature, and disturbance of the normal respiratory interchange are forces that tend to produce alterations in the developmental processes of the embryo. But so far, no definite correspondence or relation between the artificial abnormalism of circumstance and the resultant malformation can be shown to exist.

The most noteworthy point of criticism, perhaps the only one that exists, consists in the entire omission of all reference to maternal impressions—fright, horrid sights, etc., as possibly productive of monstrous forms of the fetus. There can be no denial of the evident truth that up to the present science gives no definite answer even as to the existence of this agency. There is a vast body of ungathered testimony that strongly goes to prove the operation of this factor, while, on the other hand, there is much that may be brought against the theory. In such a work as this, one naturally looks for some epitomization of the discussion or some judicial expression of opinion upon it. Two sets of sound-waves in opposite phase may produce silence, and the query suggests itself if here a similar result may have come about as a consequence of composite authorship.

THE MODERN ANTIPYRETICS: THEIR ACTION IN HEALTH AND DISEASE. By ISAAC OTT, M.D. 8vo., pp. 52. Easton, Penna.: E. D. Voegel, 1891.

DR. OTT'S studies upon the production of fever are well known, and the present volume worthily supplements these researches by an experimental and clinical study of the action (physiologic and therapeutic) of the coal-tar derivatives now so largely, so recklessly, and so unscientifically employed in abating a symptom—elevation of temperature. Dr. Ott well says in his preface: "It is necessary to understand what fever is before we undertake the study of the agents which reduce it." He subscribes to the doctrine that elevation of temperature is not necessarily an indication of increased heat-production, but rather of a derangement of the normal relation between heat-production and heat-loss. An observation in the human calorimeter upon a subject of malarial fever is recorded, seeming to prove that heat-production may be lessened during the progress of fever. The chemistry of the coal-tar products is studied and their physiologic action in reducing temperature apparently proved to be exerted upon the nervous system. According to the author: "Fever usually is set up by a temporary increase of heat-production beyond that of heat-dissipation, whilst antipyresis usually is set up by a temporary decrease of heat-production beyond that of dissipation. In fever neither a high temperature nor an increased production of heat is a necessary concomitant; but as the temperature mainly depends upon an altered relation of heat-production to heat-dissipation, so in antipyresis neither a low temperature nor a lessened production is a necessary associate, but the fall of temperature mainly depends upon an altered relation of heat-production to heat-dissipation."

In the lower animals some of the antipyretics act upon heat-dissipation otherwise than they do upon man.

The chemical constitution of the antipyretics is thought to indicate the different activities of these bodies. Thus, "antiseptic properties predominate in the alcohol hydrate derivatives, as in naphthol, whilst the antithermic properties are most prominent in the amidogen derivatives, as in antifebrin, thallin, kairin. A predominance of analgesic properties exists in the amidogen compounds in which an atom of hydrogen has been substituted by a molecule of a fatty radical, especially of methyl, as in antipyrin, phenacetin, and exalgin."

Each agent is separately studied under the head of therapeutics, and its uses, according to the judgment of the author, briefly stated. A special study is made of the value of antithermics in typhoid fever. The author wisely concludes that high temperature, *per se*, is not dangerous, and that cold water, after the method of Brand, is far preferable to any antipyretic drug in the management of this disease.

NEWS ITEMS.

The Visiting Nurse Society of Philadelphia.—Physicians having patients among the poorer classes, unable to pay for continuous nursing, will find it advantageous to call upon the Visiting Nurse Society for such temporary nursing as may be desirable. The Society furnishes competent nurses at a moderate price per visit, or when patients are destitute, without payment. It is a charity in the best sense of the word. The office of the Society is at No. 1203 Race street.

CORRECTION.

In the issue of December 19, p. 710, seventh line from the bottom, in the article on "The Fundamental Principles of Anatomical Nomenclature," for *prëencephalon* read *prosencephalon.*

BOOKS AND PAMPHLETS RECEIVED.

Manual of Chemistry. By W. Simon, Ph.D., M.D. Third Edition, thoroughly Revised, with Forty-four Illustrations and Seven Colored Plates, representing Fifty-six Chemical Reactions. Philadelphia: Lea Bros. & Co., 1891.

Fibro-sarcoma of the Neck, with Temporary Ophthalmoplegia Externa and Sympathetic Paralysis. By H. V. Wurdemann, M.D. Reprint, 1891.

Revue des Sciences Médicales. De la Paresie Analgesique à Panaris des Extrémités Supérieures. De la Paréso-Analgésie des Extrémités Supérieures ou Maladie de Morvan. Par F. Verchère. Pamphlet, 1891.

Electricity in Carcinoma. By Robert Newman, M.D. Reprint, 1891.

Addresses, Papers, and Discussions in the Section of Otology and Laryngology, at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., May 5–8, 1891. Chicago: Office of the Association, 1891.

An Introduction to Human Physiology. By Augustus D. Waller, M.D. London: Longmans, Green & Co., and New York: 15 East Sixteenth Street, 1891.

A Manual of Venereal Diseases; being an Epitome of the Most Approved Treatment. By Everett M. Culver, M.A., M.D., and James R. Hayden, M.D. With Illustrations. Philadelphia: Lea Bros. & Co., 1891.

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